THE BUILDER

a Journal for the

ARCHITECT & CONSTRUCTOR

Vol. CLIX. No. 5097. Ninety-Eighth Year.

FRIDAY, OCTOBER 11, 1940

REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

PRICE NINEPENCE.

UNIVERSITY OF TORONTO LIBRARY

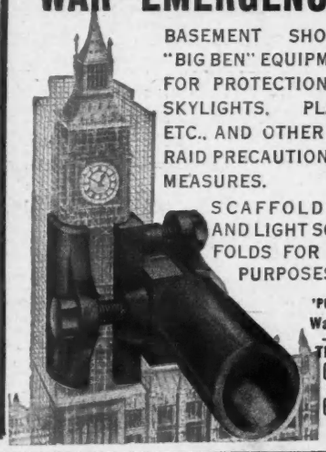
OCT 11 40

MIDHURST WHITES LTD

FACING BRICKS OF PROVED VALUE

11a REGENT ST. LONDON S.W.1.
TELE: WHITEHALL 9870

WAR EMERGENCY.



BASEMENT SHORES. "BIG BEN" EQUIPMENT FOR PROTECTION OF SKYLIGHTS. PLANT. ETC., AND OTHER AIR RAID PRECAUTIONARY MEASURES.

SCAFFOLDING AND LIGHT SCAFFOLDS FOR ALL PURPOSES.

'Phone: Walton-on-Thames 614 and 615

VIGERS FOR FLOORING STRIP. PARQUET.

35 BUCKLERSBURY E.C.4

DECORATIVE PAINTING CONTRACTORS Limited

GOVERNMENT AND COMMERCIAL CAMOUFLAGE EXPERTS
GENERAL PAINTING CONTRACTORS

'Phone: HOUnslow 3212/3/4. 'Grams. Decopaint, Hounslow

The LIFT & HOIST CO., LTD.
PRINCE ST., DEPTFORD, S.E.8.
Phone: TIDeway 2424 (2 lines)

ALL CLASSES OF LIFTS & CRANES

The STEEL SCAFFOLDING CO. LTD.

"BIG BEN TOWERS,"
23 OATLANDS DRIVE, WEYBRIDGE, SURREY

"DUCK'S BACK" FELT ROOFING

GENERAL ASPHALTE CO. LTD.
HOPE HOUSE, GREAT PETER ST. S.W.1
and at
LIVERPOOL & BIRMINGHAM

GIMSON LIFTS

GIMSON & CO. VULCAN ROAD
Telephone:

(LEICESTER), LTD. LEICESTER
Leicester 60272

EVANS LIFTS LTD

ABBEY LANE, LEICESTER.
London Office 66 VICTORIA STREET, S.W.1.

CLARIDGE'S PATENT ASPHALTE COMPANY, LIMITED Established 1838.
MOORGATE STATION CHAMBERS, E.C.2.
Telephone: METropolitan 0262

BIRMINGHAM TEL: CENTRAL 8351 EDMONDS LONDON TEL: CHANCERY 7694

JOINERY CONTRACTORS TO ADMIRALTY, WAR OFFICE, AIR MINISTRY & H.M.O.W. LISTS

SALTER, EDWARDS & CO., LTD.
ASPHALTERS
LONDON, 'Phone: LAD. 1039

PICKERINGS' LIFTS
Established 1854
STOCKTON-ON-TEES
116, Victoria Street,
Telephone: London, S.W.1 VIC. 9860

YES A POWERFUL, ROBUST, SELF-SUSTAINING WINCH

Will not run back. No wheels to get caught in.

WINCHES

Hundreds of thousands supplied during the last 35 years to Govt. Depts., Cpns., Rlys., innumerable traders, etc., etc.
The Largest Exclusive Firm Engaged.

NO RATCHETS, PAWLS, SPRINGS OR GEAR WHEELS

THE NEUCHATEL ASPHALTE CO., LTD.

PERMANITE ASPHALTE

SEALOCRETE

WATERPROOFS & GAS-PROOFS A.R. SHELTERS.
HARDENS, DUST-PROOFS & OIL-PROOFS FLOORS.
ATLANTIC WORKS. MACBETH ST., LONDON. W.6

RAGUSA ASPHALTE

NOTE TEMPORARY ADDRESS
18 GRANGE ROAD, SUTTON
TELEPHONE:—VIGILANT 6647-8-9

GEO. ARMITAGE & SONS, LTD. A.R.P. ROBIN HOOD WORKS, WAKEFIELD PRODUCTS

ARMITAGE ENGINEERING BRICKS

are ideal for A.R.P. construction, being capable of withstanding STRAIN OF OVER 600 TONS. Absorption is only 0.97% (Kirkcaldy). Used on some of the principal Engineering Contracts in the Country.

We are also manufacturers of Best Red-Facing, Rustic, Multi-coloured and all kinds of moulded Bricks, Machine-made and Sand-faced Tiles, and Artificial Stone to match any natural stone, and supply all classes of YORKSTONE, either rough sawn or to Architects' details.

Telephone: ROTHWELL 41-42-46 (LEEDS). *Telegrams:* "ARMITAGE SONS, ROBIN HOOD."

W. DUFFY'S PATENT

"IMMOVABLE-ACME" WOOD BLOCK FLOORING

AND ALL DESCRIPTIONS OF HARDWOOD & CREOSOTED WOOD PAVING.

TELEPHONE: RIPPLEWAY 2771 (6 LINES)

TELEGRAMS "DOWELLED LONDON."

THE ACME FLOORING & PAVING Co (1904) LTD

CHIEF OFFICE & WORKS:

RIVER ROAD, BARKING, ESSEX.

ARP • Air Raid Shelters

Interior view of a typical Air Raid Shelter constructed with Concrete and "Ribmet" Reinforcing Units.

Contractors:
Tarslag Ltd., Wolverhampton, Stockton, South Harrow.

"Ribmet" Reinforcing Units have been designed specially to provide a speedy and efficient method of constructing *in situ* reinforced concrete lining for shelters without the use of close boarded shuttering. The shelters meet the requirements of the Admiralty, Air Ministry and Home Office.

Write for full details:

"Ribmet" (REGD.) REINFORCING UNITS

THE EXPANDED METAL CO. LTD.

Patentees and Manufacturers of Expanded Metal. Engineers for all forms of Reinforced Concrete and Fire-resistant Construction.

"DUNEDIN," UNDERWOOD ROAD, CATERHAM, SURREY

WORKS: WEST HARTLEPOOL ESTABLISHED OVER 45 YEARS

THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

VOL. CLIX OCTOBER 11 1940 No. 5097

WAR DAMAGE INSURANCE

ONE of the most hopeful signs of good progress in the war was the Prime Minister's announcement in the House of Commons on Tuesday of a compulsory national scheme of insurance against war damage to property and furniture. Such a measure will be a great stimulus to those who would invest in real estate but for the seemingly increasing risks involved. There is no doubt that a great spreadover might be devised which would make it possible to remove the danger of complete loss, just as it has been removed in other spheres by fire insurance ; and the risks and commitments involved vary little in anything but degree.

There are, however, two fundamental points of difference in the two transactions. The rates of premium in fire, as in other branches of insurance, are based upon exact figures of experience which, by the law of average, are likely to remain constant, or nearly so, over any normal period. It is the job of the actuary to collect and dissect these figures, so that the rate necessary for the insured to pay as an annual premium shall be sufficient, but no more than sufficient, to meet the claims likely to be made within the period covered and to leave a reasonable margin for reserve, and for a fair business profit.

Insurance thus becomes removed from the character of a pure gamble and becomes almost an exact science, and by such means the insurance business has become one of the most stable and substantial elements of our commercial life. Without the actuary and his figures, insurance would simply mean a bet between two parties. Each insured would, in fact, lay odds of one to a thousand that his house would be burnt down during the ensuing twelve months, and the loser would pay. With the scientific data available the transaction becomes the better and more respectable one of paying a subscription for the privilege of drawing from funds up to a fixed limit, in the case of misfortune.

In the case of war damage, the actuary has literally nothing to go on. At the moment it may appear that each day, on an average, sees so much value of property destroyed. But at any time the tempo and incidence of war may change and produce the widest of fluctuations in the daily average, and there is no certainty that experience of even a whole year of total war would produce any basis for accurate forecast as to the future. The difficulty, nay, the impossibility, of determining a premium which would cover the risks involved is at once apparent. If it is placed too high, there will be a surplus unnecessarily collected from a people already overburdened with expenses and taxation. If it is placed too low, the contract which has been made would have to be broken, and the country which breaks its promises rarely breeds loyal citizens. How is the narrow passage between these formidable rocks to be weathered without shipwreck ? If we must sail closer to one than the other, which shall we choose ?

Here it is that we come upon the second fundamental difference between commercial and State insurance. The capacity of an insurance company to meet its obligations is limited to the amount of funds and property it holds. If it finds those resources insufficient, there is only bankruptcy before it and an end to the trust which the business world has placed in it. Further, those resources are entirely dependent upon insurance business. The whole machine is thus a delicate organism nicely, if securely, balanced upon its own limitations. But the same enterprise when administered by the State has no such limitations. There is substantially no bottom to the public purse. Its resources are the joint resources, public and private, of the whole community, and the value of every stick, stone and acre of land in the country. If every director of a business concern had such unlimited wealth, coupled with a high sense of honour, there would be no such thing as a bankrupt business.

The State can therefore face an insurance deal with less circumspection than could the largest insurance company. It is right and fair that as true a forecast as can be imagined should be made the basis of any State scheme of this kind, and that the aim should be to make it as self-supporting as possible. But the possibility that things will work out more seriously than we think need not be such an appalling prospect to the State as it must be to private enterprise. Unemployment insurance did reach such a stage not so many years ago, and serious as was that state of affairs, the State did not default nor was the country ruined.

So it seems that with compulsion taken as a necessary feature, there is no real obstacle to a businesslike and thoroughly practical scheme of insurance against war damage, and that if circumstances grow beyond the limits of its internal funds there is no need to make dire prophecy against the country.

There is no need to lay stress upon the relative peace of mind and improved confidence among property owners which such a scheme would produce, and its results would go much farther than that. At present, in a long war, it is difficult to see how rateable values can be fairly and decently maintained in districts which are most vulnerable, nor how these districts are to recover their self-sufficiency in such circumstances. To remove one of the chief causes of anxiety among the property owners of such districts will do much to keep up that confidence which is the foundation of a prosperous neighbourhood.

THE FONT, CHURCH OF ST. LAWRENCE, FELTHAM.

Forming part of the additions to this Middlesex Church, the font shown above has been carved by Mr. P. Lindsey Clark, A.R.B.S. The church, which is illustrated elsewhere in this issue, has been erected to the designs of Mr. Thomas H. B. Scott, F.R.I.B.A.

NOTES AND NEWS

A Ministry of Building.

THE Prime Minister announced on Friday last the establishment of a Ministry of Works and Buildings, with Sir John Reith at its head. It is understood that the post of First Commissioner of Works will merge with the new Department. A further statement will be issued as to its scope and functions. In the meantime, Mr. H. B. Bryant, Secretary of the Building Industries National Council, contributes (on page 352 of this issue) an article dealing with some of the problems the new Minister will face.

The industry on its part may congratulate itself on the successful outcome of ten years of directional effort on the part of its appointed representatives, the Building Industries National Council. It is an example of the value of cohesion which must be maintained and strengthened in the days to come.

In the absence of the official statement it is not possible to comment on the new step other than to commend it in principle. The building industry, however, may count itself fortunate in Mr. Churchill's choice of a Minister. Sir John Reith (on whom a barony is to be conferred) is a first-rate administrator with a well-known taste for tackling new problems. His record of work at the B.B.C., as Chairman of British Airways, Ltd., and as Minister of Transport is sufficiently diverse in character to fit him to cope with the wide ramifications of the building industry. He may be assured, in advance, of the industry's desire to co-operate to the fullest extent.

Architectural Assistants and War Damage.

WE have received the following statement from the R.I.B.A.: It has been suggested by a Government Department that it would be useful if the R.I.B.A. prepared a list of architectural assistants who would be prepared to go at very short notice to any part of the country which might be the subject of very intensive bombing, and where the services of the local authority's staff and the local professional men were quite inadequate to cope with the work of assessing the damage and the necessary first aid repairs.

Any architectural assistants who would be prepared to have their names included in such a list are requested to communicate with the Secretary, R.I.B.A.

Constructional Export Group: S. American Mission.

A TRADE Mission is shortly to be sent to South America, under the chairmanship of Lord Willingdon. Sir Jonah Walker-Smith, M.P., Director of the National Federation of Building Trades Employers, will accompany the mission as representative of the Export Group for the Constructional Industries. A statement on recent progress made by this Export Group is on page 359.

Bombs Near Liverpool Cathedral.

IN a reference to the bombing of Liverpool Anglican Cathedral, a *Times* correspondent states that "on the whole, the cathedral has had a fortunate escape. The south wall is chipped in places by flying stones, and the glass in the windows along half its length has gone, but otherwise the building seems to have suffered no harm. The nearest bomb dropped in the soil of the unsurfaced terrace called Founder's Plot, and left a crater not more than 6 ft. wide. One yard away is the only stone out of place in the whole building. It is at the foot of the steps leading to the Lady Chapel, which has lost all its windows on that side and all the 'famous women' windows off the atrium and staircase. The edge of the crater almost touches the Chavasse tomb, which bears not a scratch.

"In the choir the ruby and emerald windows have gone; in the south choir aisle the annexe window. Some vestry windows, too, are holed. In some instances part of the glass remains and may be usable, but most windows present a strangely tattered look, with less than half the little pieces of glass left, and those twisted with the tearing and bending of the lead. They look like autumn leaves against the sky."

An Architect Decorated.

SECOND-LIEUT. WALLACE LANCELOT ANDREWS has been awarded the Empire Gallantry Medal for the part he played in disposing of a time bomb in London. He is an architect by profession. On August 26 Mr. Andrews was engaged in extracting the fuse of a bomb. After it had been withdrawn a little it dropped back as if on a spring. Removal was attempted several times without success. Mr. Andrews then placed his section under cover, tied a length of cord to the fuse discharger ring and pulled. The bomb exploded and he was blown nearly 30 yards. The official report adds "Lieut. Andrews displayed remarkable coolness throughout the incident."

The Threat to St. Paul's.

THE Dean and Chapter of St. Paul's have decided to place a tablet as near as possible to the site at the south-west of the Cathedral from which the bomb was recently so gallantly removed, and it is hoped to include in the inscription some at least of the names of the men who took part. In making this announcement, the Dean of St. Paul's writes:—"For obvious reasons we intend to defer the execution of this plan until the end of the war, or at least until the end of the attack on London."

W. F. Foster, F.R.I.B.A.

THE death is reported of Mr. William Frederick Foster, F.R.I.B.A., F.S.I. Mr. Foster, who was 64, was chairman of the National Building Society, of which he had been a director for 25 years, and for 44 years he had been architect to Meux's Brewery, Ltd. During the Great War of 1914-18 he was a member of the Thames Ditton Special Constabulary, and later served as a lieutenant in the R.N.V.R. on anti-submarine duties.

Housing Centre Tuesday Lunches.

OWING to the frequent air raids on London, the Housing Centre has decided to hold no lunch meetings during October, but members and their friends are invited to bring their sandwiches on Tuesdays, so that they can still have the opportunity of meeting together. Talks will again be arranged as soon as circumstances make it possible.

Professional Announcements.

MESSRS. MURRELL AND PIGOTT, FF.R.I.B.A., of 44, Bedford-row, have changed their address to 14, Cromwell-place, South Kensington, S.W.7 ('phone: Ken. 8234), as from Monday, October 14, and the firm will now be known as R. Mountford Pigott, M.C., F.R.I.B.A., J.P., Chartered Architect.

MESSRS. GARDINER & THEOBALD, chartered quantity surveyors, have removed, through *force majeure*, from 96, Gower-street, W.C.1, to 45, Albion-road, Sutton, Surrey.

MR. ALBERT E. BATZER, F.R.I.B.A., F.S.I., 36, Ebury-street, S.W.1, will transfer his office temporarily, after October 15, to "Estcots," East Grinstead, Sussex. Tel.: East Grinstead 360.

IN 1915.

EXTRACT FROM *The Builder*, OCTOBER 8.

We learn from a German paper—we always learn from anything German—that when the days of peace shall have returned the worship of the foreign types of beauty will be found to have vanished with the rest of the paraphernalia of the cult of foreignism. . . . The German woman must be discouraged from mating herself with the inferior specimens of humanity of other countries, and must take her part in rearing a glorious race of demi-gods in very fact and not in fable, as were the old divinities of Olympus. Unhappy artists of Ancient Greece, to have lived too early to immortalise the coming race!

PRINCIPAL CONTENTS

ARTICLES	Page
WAR DAMAGE INSURANCE ...	347
WAR-TIME BUILDING PRACTICE—31. By R. Cotterell Butler ...	350
THE MINISTRY OF BUILDING. By H. B. Bryant	352
CORRESPONDENCE: Valuation for Insurance Purposes; Saving of St. Paul's	359
THE CONSTRUCTIONAL EXPORT GROUP	359
CONCRETE IN HOUSING—2. Foundations and Ground Floors. By Edric Neel, A.R.I.B.A.... ...	360
BUILDING MATERIALS: Official Distributive Scheme; Report on Shortage of Essential Materials ...	362
NEWS OF CONSTRUCTION ...	364-7
WAGES, PRICES OF MATERIALS	368-9

ILLUSTRATIONS

PUNCH'S HOTEL, DONCASTER. By T. H. Johnson & Son	353
ST. LAWRENCE'S CHURCH, FELTHAM. By T. H. B. Scott, F.R.I.B.A.	355
EASTBOURNE GIRLS' HIGH SCHOOL. By L. Roseveare, M.Inst.C.E.	357

COMING EVENTS

Friday, October 25.—Architects Registration Council. Quarterly meeting, 66, Portland-place, W.1.

Saturday, October 26.—Institution of Structural Engineers, Institution of Civil Engineers and Institution of Municipal and County Engineers (Yorkshire Branches). Mr. T. J. Gueritte on "The Channel Tunnel." Hotel Metropole, Leeds. 2.30 p.m.

Tuesday, October 29.—Plumbing Trades National Apprenticeship Council. General meeting. Institute of Plumbers, 81, Gower-street, W.C.1.

WAR-TIME BUILDING PRACTICE

By R. Cotterell Butler, A.R.I.B.A.

31.—INDUSTRIAL PLANNING AND DESIGN.

BLACKOUT: CURRENT PROBLEMS.

A VERY considerable number of industries engaged in the production of war-material have been operated for some time on a twenty-four-hour basis, and in these cases the shorter hours of daylight do not imply automatically a reconsideration of the blackout problem. However, for technical reasons as well as owing to labour conditions, it is not always possible for war-material production to operate on a twenty-four hour schedule, and this is even more frequently the case with export industries, industries which are vitally important.

Thus there appear to be good reasons why the blackout situation should be considered afresh, and manufacturers encouraged to review their particular problems, and to take such steps—with the advice of the architect or builder specialising in such problems—as may be necessary to effect a high standard of efficiency.

The general design of blackout equipment has already been discussed,* here it is proposed to review only those considerations which are of particular and topical interest at the moment. These factors may be grouped as follows:

1. Entrances and exits (points which arise in consequence of more stringent observation of regulations.
2. The maintenance of blackout equipment, with particular reference to winter conditions.
3. Winter ventilation.
4. Saving time spent in "blacking-out."
5. Blackout and splinter protection.
6. "Blackout lighting."

ENTRANCES AND EXITS.

Quite apart from any interpretation of the Defence Regulations, it is obviously undesirable that flashes of light from opening doors should occur. A certain amount of opening and shutting doors is bound to take place in almost every factory building, and in certain types—where inter-shop communication is across open space—may assume considerable proportions. However, these factors are considerably less than those introduced by A.R.P. measures. The present arrangement whereby the warning siren is taken as an "alert" signal, rather than as a "take cover" warning, means that when the danger is judged to be really imminent, operatives must proceed to take cover at once. Thus, since in very few works shelters are directly connected to workshops, at a time of maximum danger egress from shops and offices must take place. Certainly under such circumstances flashes of light would be most undesirable.

The practice of immediately extinguishing or considerably reducing all lights is only practicable in certain types of industry, since where some kinds of machinery are employed it would be most dangerous suddenly to cut out lighting, even if the power supply were similarly cut off. This is not always possible.

In designing light baffles to doorways much the same considerations apply as to the design of light-proof ventilators.

(*a*) No rays of light from the inside should be allowed to pass in a direct line to the outside.

(*b*) All surfaces (whether actual baffle partitions or existing walls acting as baffles) should be suitably treated so that light rays falling directly upon them are sufficiently absorbed to prevent any visible light being reflected † or dispersed in such a way that a glow would be visible from outside.

(*c*) Particular care should be taken where rays reflected as above (even though weak) are, owing to the position of the doorway, or the angle of the light source, likely to be cast either upwards or across country where they might be visible.

(*d*) While light baffles should be fully efficient, no more material other than absolutely necessary should be employed, otherwise undue space might be taken up. In any case unnecessary baffles are uneconomical, particularly in view of material shortages.

(*e*) The cross section of the area enclosed by the baffle should not be less, and usually need not be greater than that of the operative part of the doorway being baffled. (Where large objects have to be carried through the doorway the baffle may have to be greater.)

(*f*) Except where definitely unnecessary (as in the administrative parts of a building) provision for taking down all or part of baffle screens should be made to allow stores or other very large objects to pass.

(*g*) Baffle screens should be made sufficiently strong up to an adequate weight to prevent damage, and the value of combining blackout and splinter protection in one baffle should be appreciated, also the value of an efficiently baffled doorway as a means of ventilation.

(*h*) Where large goods or trolleys are to be moved during blackout hours (necessitating a double-door baffle—see sketch), some form of locking device should be provided to prevent both sets of doors being open at the same time.

In deciding the actual size and position of entrance baffle screens it is as well to remember that walls adjacent to the entrance may frequently be conveniently arranged to act as baffles, if suitably treated to render them light absorbent, as the amount of new baffle area needed may then be considerably reduced. Thus if a choice is possible, by selecting doors near internal walls for use during blackout, economies may be effected. The reduction in baffle obtained in this way may be easily seen by comparing Diagrams I and M.

The direction of swing of the door has an important bearing upon the arrangement of the baffle entrance. Alternative schemes suitable for various conditions are shown in the diagrams. It will usually be found in practice that it is not worth while endeavouring to make use of the actual door as a baffle. But, if the door is a well-fitting one, and is to be used only for light duty, a most economical baffle (particularly suitable for administrative entrances) may be arranged as shown in Diagram K. Here the door acts as a baffle, is prevented from opening too wide by means of a stop, and a hood is arranged to come below the level of the top of the door, or alternatively made to project sufficiently far over to prevent light getting through. Diagram L shows an arrangement for using an outward-opening door as a baffle (the hood should have a fully-formed pelmet board).

Double doors, except where they are required for running trolleys through (see sub paragraph *h*), above

* W.T. B.P., No. 11, March 8th, 1940.

† Absolute light absorption is not possible in general practice.

may be baffled in much the same way as single doors. A particularly neat arrangement whereby only one part of the baffle need be removable, and yet the door quite unobstructed during the day is illustrated in Diagram N.

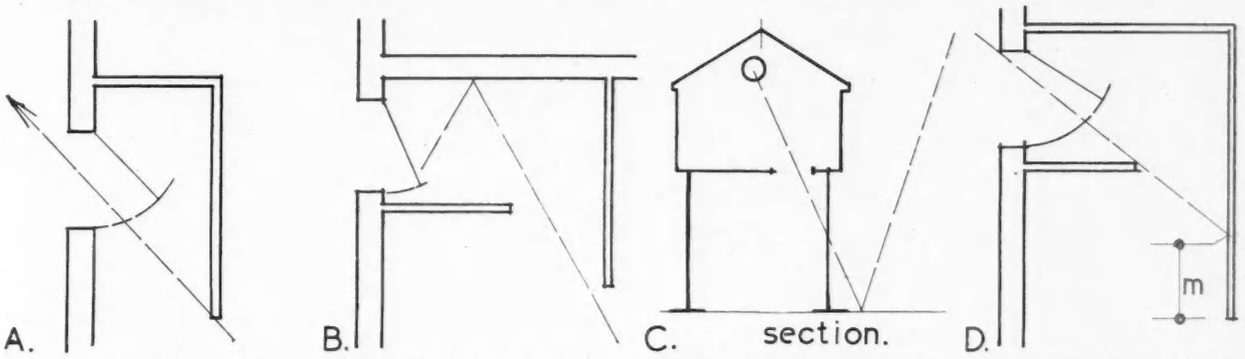
PROPORTION OF BAFFLE SCREENS.

By referring to Diagram O (exaggerated) the possible variation in the position of baffles (plain and broken lines) may be seen. Thus, as one baffle plane is increased in length, the other may be correspondingly decreased, the same margin of safety ‡ being maintained throughout. Advantage may be taken of this fact in relating baffle entrances to the circulation arrangements required in stores, shops, and other similar buildings.

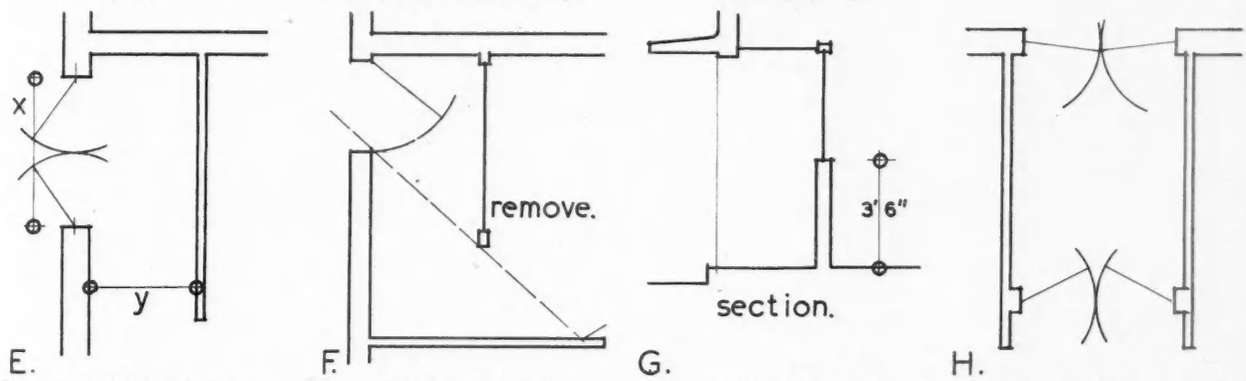
Some allowance for the position of the source of light may sometimes be made but only if it is at a considerable distance from the entrance, or the walls near the baffle and visible from outside are light-absorbing.

‡ The distance between the point where the critical light ray from inside strikes the baffle, to the opening through which rays must not pass, or *vice versa*.

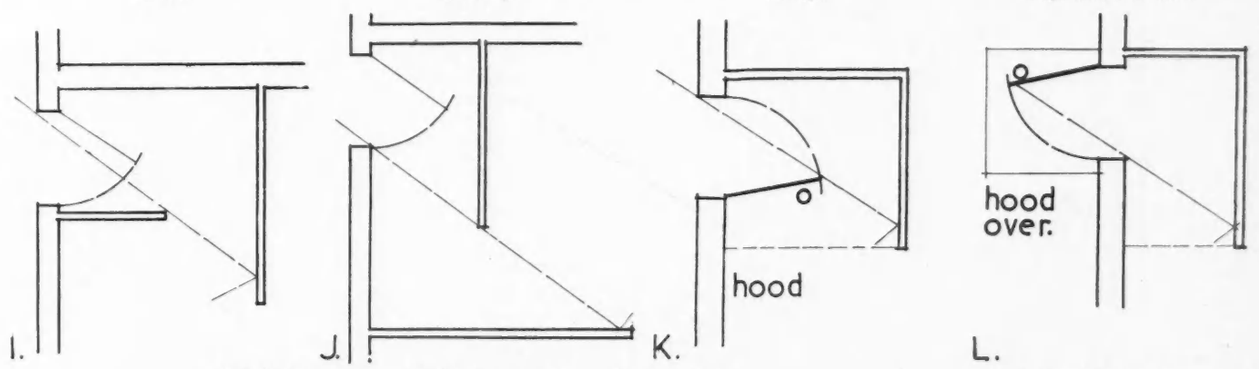
(*To be continued.*)



A. Direct ray of light, inside—outside. (BAD).
B. Internal wall acts as baffle; must be treated to render light absorbing.
C. Ray reflected from ground and visible from sky. (BAD).
D. Baffle unnecessarily long. (BAD).

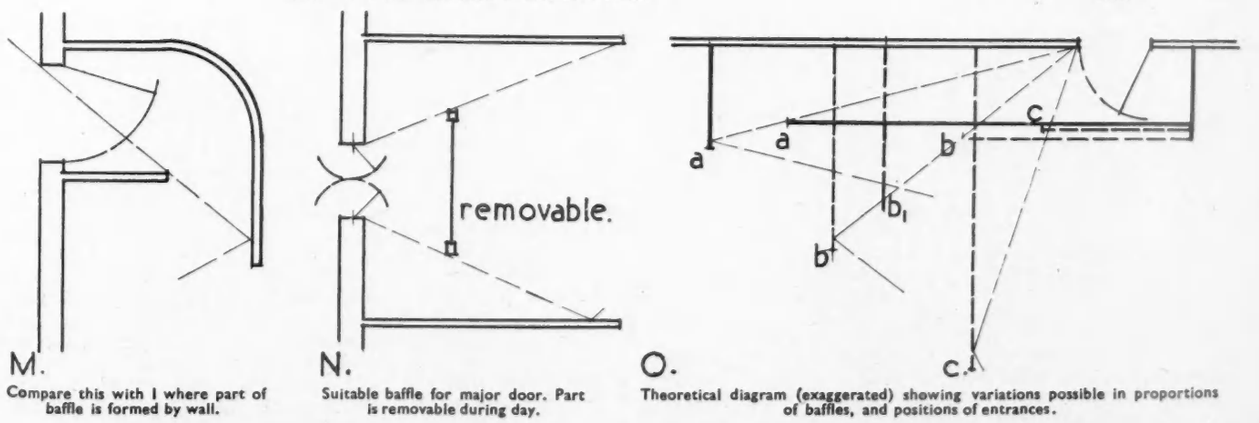


E. Entrance at baffle less than doorway (BAD).
F. Section of baffle removable in day-time. (GOOD).
G. Lower part of baffle made rigid to stand damage.
H. Note—Both sets of doors must never be open at the same time.



I, J, K—Various types of baffle for use with inward opening doors. Note—In K the door itself is used as a baffle.

L. Outward opening door used as part of baffle.



M. Compare this with I where part of baffle is formed by wall.
N. Suitable baffle for major door. Part is removable during day.
O. Theoretical diagram (exaggerated) showing variations possible in proportions of baffles, and positions of entrances.

Diagrams showing various considerations arising in connection with the design of light-baffled doorways.

THE MINISTRY OF BUILDING

By H. B. BRYANT.

It is difficult effectively to comment on the creation of the new Ministry of Building and Public Works pending publication of the explanatory statement as to its immediate purpose and ultimate scope, which has been promised by H.M. Government. But whatever the terms of that statement may be, if the appointment of the new Ministry means that H.M. Government at last acknowledges (i) the extent to which the war-time building programme has been mal-administered for the want of authoritative departmental cohesion, (ii) the very widespread economic advantages arising from a more ordered and comprehensive approach to, and relationship with, the building group of industries, and (iii) the need for comprehensive and systematic and bold planning of the constructional requirements of the country by both Local Authorities and Government Departments, it is indeed to be welcomed as a long overdue reform.

If, moreover, it means that H.M. Government has also realised that within the building industries exists the main, and almost the sole, instrument not only for effectively maintaining the consistently needed increasing supplies of arms and munitions, but also for applying the practical solution to the many urgent problems now arising on the domestic side of the national war effort —as well as of the constructional problems of the post-war period—then, indeed, it is a nationally progressive step, both economically and industrially, of the very first order.

Co-ordination of Departmental Building.

H.M. Government are now prepared, the industry will hope, to take the rational view that for their part they must immediately co-ordinate, in the most efficient manner, all their building requirements under a single administrative machine, and thus stop once and for all the internecine departmental warfare on building matters and, at the same time, foster the development of, and provide a place in the administrative hierarchy for, a responsible central organisation fully representative of the building industries; this would be the recognised point of contact between H.M. Government with respect to all the many and complex matters of common interest to all sections and branches of those industries. If these things are brought to be, the creation of this new Ministry may truly be regarded as a most outstanding forward-looking measure of political, economic and social development.

With effective administrative machinery, freed from the canker of departmental insularism, working throughout all its activities on an organised basis in harmony with the industries and with the single urge of the national well-being, the opportunities and power for social good and economic betterment that will be created and engendered are almost illimitable.

Properly administered in a spirit of enlightened national interest, this new Ministry has the power to avoid all the political and administrative crimes committed against the building industry during the last post-war period; in itself a justification for its creation. If it will set up machinery to ensure that all the best of the influences and resources of the building industries are directed solely to the national economic and social betterment, without interfering with, but giving full play to, the great qualities of individualism inherent in the art of Architecture and the practice of building craftsmanship, then it will do all that is necessary to put the British building technique even more pre-eminently at the head of the world's crafts and technical achievements than it is at present. Thus and only thus can it lay the foundations of a British, Foreign and Colonial building development policy which will prove to be so essential in the next post-war period.

Support from the Industries.

The Minister will early find within the industries a full measure of sympathy with, and support for, him in his task.

If he conducts his administration on broad, enlightened and liberal lines he will find the industries will respond to the fullest capacity to the demands the country's interests and needs may make upon their resources. He will be wise to engender and base his policies accordingly upon the simple but still insufficiently recognised fact that the building group of industries is, in the industrial outcome, one indivisible whole; one single industry which can only produce of its best if it is regarded and approached in all phases of its activities as a single professional-cum-industrial unit. He should learn early what, it is to be regretted, H.M. Government have not yet realised, the vitally important contribution the building professions alone can make to the development of true national greatness.

The Minister must do all that is open to him, consistent with the freedom of industry, to kill the canker of organisational separatism. He must do all that is possible to encourage responsible representation of the true organisational interests of the individual partners in the industries to the end that Architects, Engineers, Surveyors, Contractors, Operatives and, above all, Building Materials Manufacturers and Suppliers can individually and collectively speak with one authoritative voice. He should understand the importance of completely realising that there is not a single building question which in the ultimate is not common to all sections. No industry can or does contribute more to the higher human needs than building.

The building industry is fortunate in that Sir John Reith's administrative record has the right ring about it. The creation of his Ministry may prove to be a political masterpiece. He will find that the administrative metal of the industries, too, has the right ring about it, and that no industry has a more effective or higher standard of functional efficiency than has that of building.

The Minister will find many patches, located throughout the other Departments now concerned with building, of administrative fungi and dead wood. These he must root out ruthlessly. He will find many supernumerary and redundant committees, and so-called, and often merely self-called "Technical Advisors" (who in practice are quite unable to function as such and in time invariably become the very tamest of Departmental lambs) scattered throughout the other Ministries, all alleging to be concerned with building matters, but in practice and in general effect merely interfering with the free and responsible functioning of the industry.

One such sometimes comic, but none the less quite dangerous, committee he must certainly uproot, if his Ministry is to survive even the opening onslaught of departmental reaction which, if history is to repeat itself, is certain to arise against it, is the one euphemistically named the Works and Buildings Priority Committee, at best a progeny of departmental philandering with totalitarian bureaucratic autocracy.

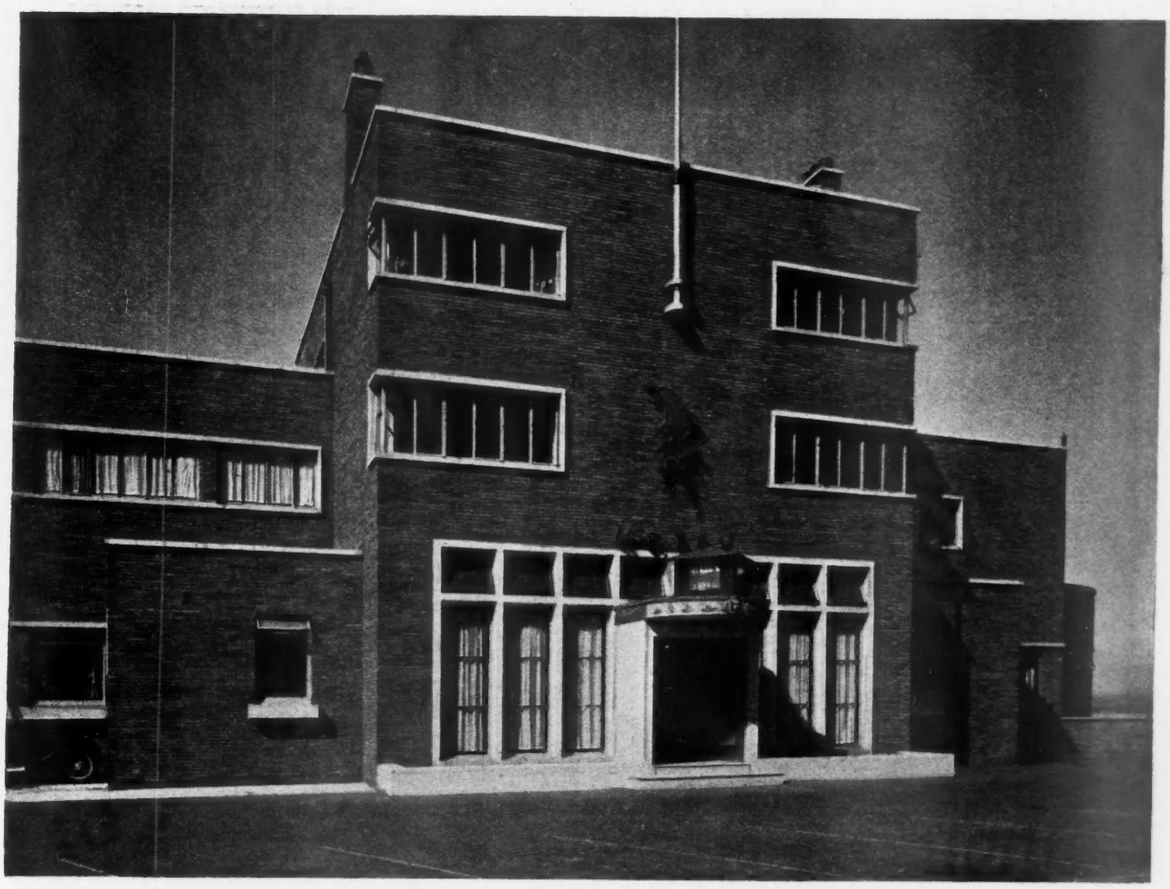
One of the Minister's earliest actions should be to take over the present Building Research organisation and plan it upon a completely independent basis. He should, however, retain and strengthen (and extend where necessary) those Advisory Committees nominated by and representative of the industries which have been set up and which have done all that has been humanly possible to keep certain Ministries (as one example only, the Ministry of Home Security) on sane and efficient lines of policy. The Minister will find that, allowed properly to function, these responsible and representative committees are capable of rendering him the soundest of disinterested advice.

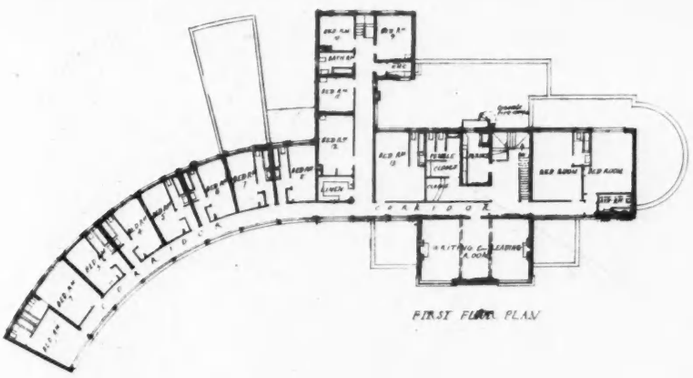
The Ministry and the Industry.

The Minister should be at pains immediately to introduce himself to the recognised appointed and responsible leaders of the professions and of the industries making up the industrial building unit. He should hear personally their views on matters which are likely to concern both them and his Ministry. He will find these responsible leaders of the stuff of which sterling colleagues, far-sighted and disinterested advisors, great industrialists and, therefore, great public servants, are made. He cannot hope effectively to administer the official demand on an industry without knowing almost intimately its appointed leaders and responsible representatives.

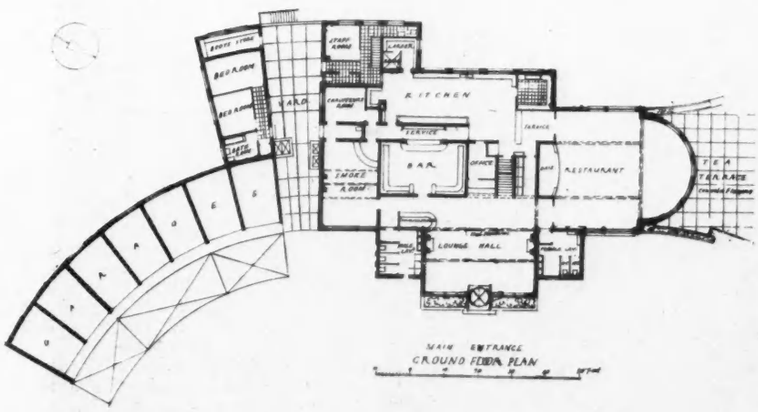
There is no doubt that whatever their purely personal views on any particular matter may be, the Minister will receive from the representatives of the industries the broad hand of welcome both to the building industries and to his great task. This task is manifestly a joint one; the Ministry on one side, the Industry on the other. So far as the industries are concerned they will, I believe, recognise it as a task which no one since, perhaps, the immortal Pericles, has been given the honour and the great opportunity to undertake.

Finally, it is most important that the Minister should not for a moment longer tolerate the official view that the building industries represent a fixed sum of industrial resources. That view has in the past been the smoke-screen put up by the departments concerned with the official war building programme to cover their failure properly to organise the programme itself and consequently to achieve its necessary and more rapid execution. With proper and effective guarantees, the labour and manufacturing resources of the building industries are capable of early, ordered and comparatively illimitable expansion. If that simple fact is made to underlie all aspects of the new Minister's policy in relation to building matters, it will prove to be the solution of the many problems which have obviously been found to be insuperable by his Departmental predecessors.





FIRST FLOOR PLAN



GROUND FLOOR PLAN

THE site of this hotel is on the south side of the Great North-road, about one mile south of the town of Doncaster.

PLAN.—Accommodation on ground and first floors is shown on the plans. On the second floor are three more bedrooms, a private dining-room, and a private lounge.

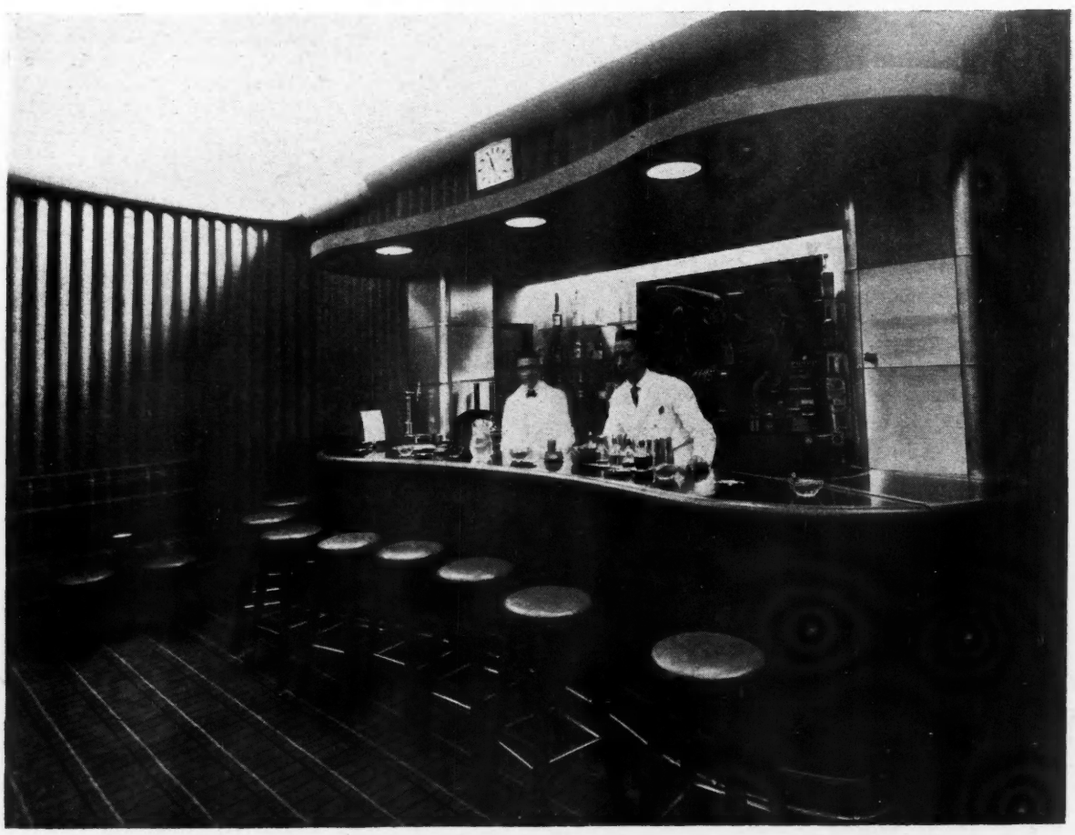
STRUCTURE is partially steel-framed, but mainly brick with wood floors and suspended plaster ceilings on to expanded metal grounds. The hotel is centrally heated by means of a low-pressure installation, and all public rooms are air-conditioned. A central vacuum-cleaning plant is also installed, and all bedrooms are complete with telephones and a complete signalling system for calling staff as required. The main entrance is faced with 11-in. by 2-in. rustic facing bricks, surrounds to the windows, etc., being in precast stone with faience surround to main entrance door.

INTERNALLY.—The restaurant is flush-panelled in sycamore, and indirectly lit from curved lighting and dome lighting in the ceiling. The American bar has a black sand-blasted panel by Sigmund Pollitzer. The general contractors were Messrs. Frank Haslam, Ltd., Doncaster. A list of sub-contractors is given on page 365.

MESSRS. T. H. JOHNSON & SON, ARCHITECTS

PUNCH'S HOTEL, GREAT NORTH ROAD, DONCASTER.

THE SMOKE ROOM.



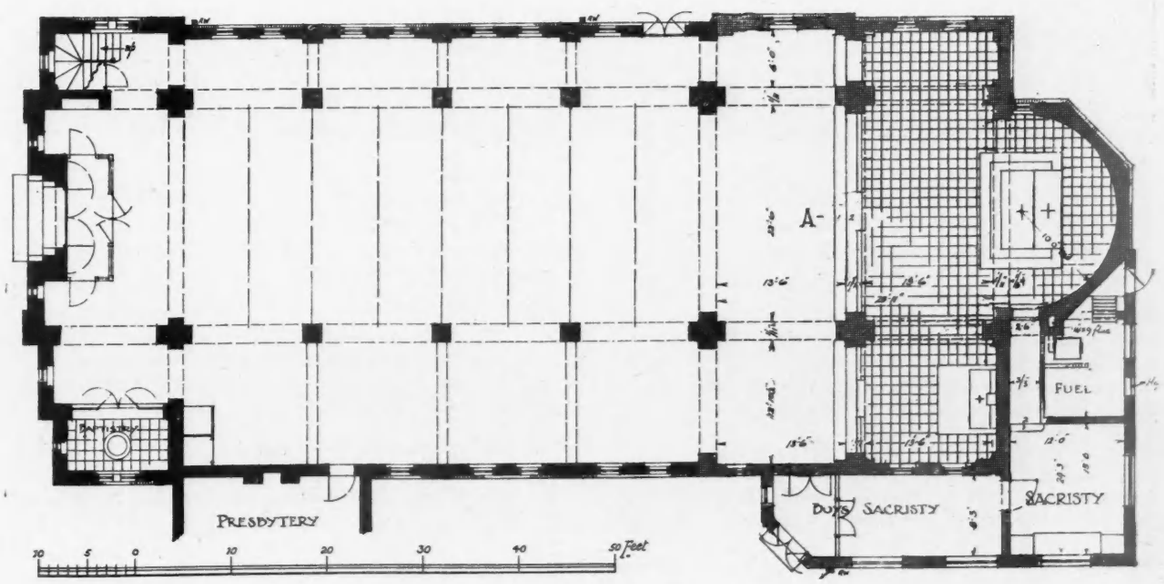
THE AMERICAN BAR.

PUNCH'S HOTEL, DONCASTER. MESSRS. T. H. JOHNSON & SON, ARCHITECTS.

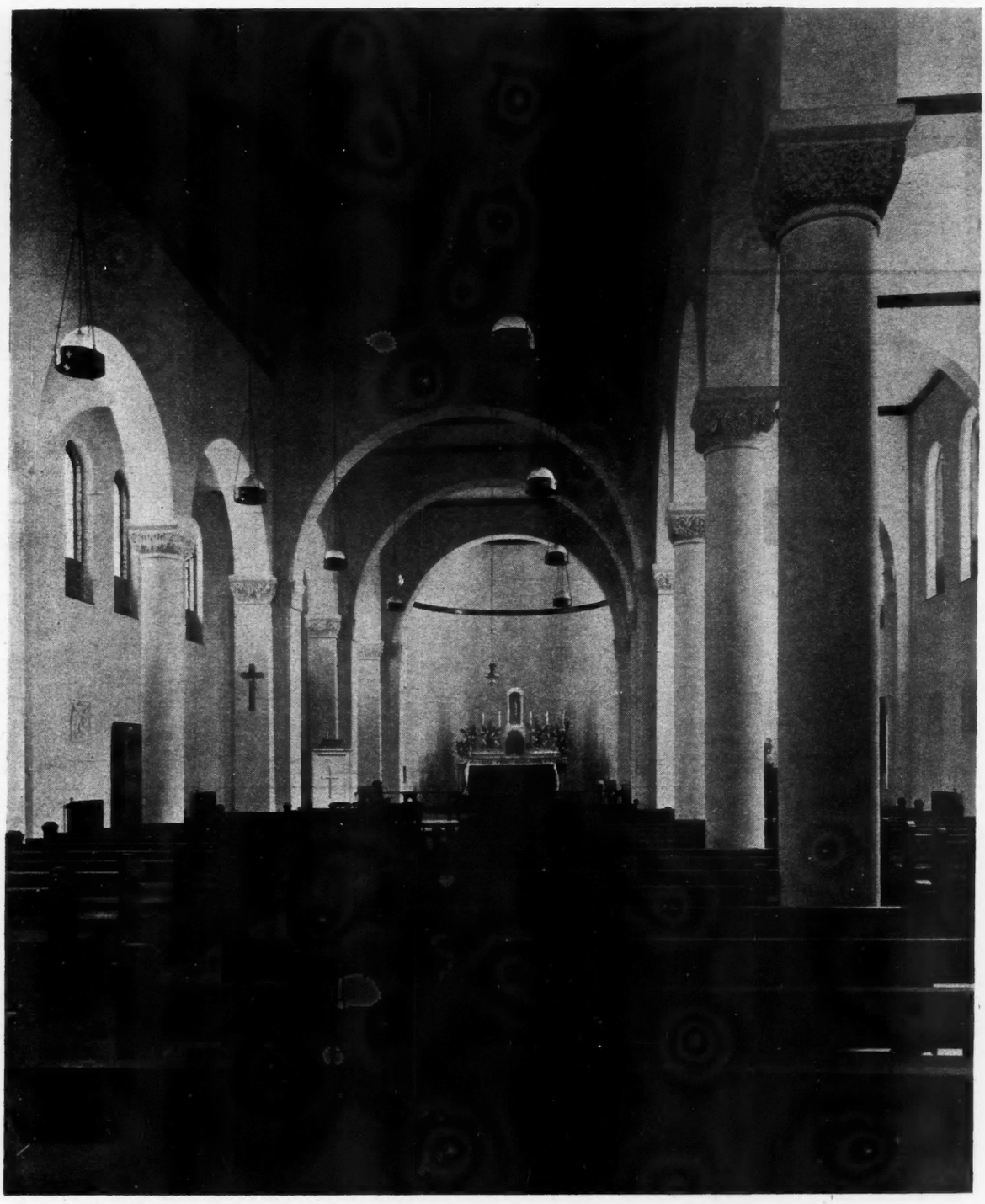
THE ENTRANCE FRONT, SHOWING PRESBYTERY ON RIGHT.

CHURCH OF ST. LAWRENCE, FELTHAM, MIDDLESEX.

MR. THOMAS H. B. SCOTT, F.R.I.B.A., ARCHITECT.



PLAN.



THE NAVE, LOOKING TOWARDS SANCTUARY

THE additions to this church of St. Lawrence, Feltham, Middlesex, are externally in multi-coloured brick. The interior has stone columns to the nave, and the walls are finished in "Snowcrete" and "Colormix" of Portland stone tint. The carved capitals to columns, the stone panels of the Stations of the Cross built into the walls of the aisles, and the typanum over the main entrance were sculptured by Mr. P. Lindsey Clark, A.R.B.S.

The original builders were Messrs. Wm. Downs, Ltd., and for the completion of the transept, sanctuary and sacristies Messrs. Fassnidge, Son & Norris, Ltd. Heating is by low-pressure hot-water radiator system, and lighting by electricity.

The main roof is of timber framing with Bridgewater Roman tilings, and the flat roofs of aisles are concrete beams with asphalt coverings. The floors of nave and aisles are of wood block. The pavings to sanctuary, etc., are of terrazzo tiles in 12-in. squares.

Messrs. Holley & Pike executed the seating benches, confessional boxes, and other internal fittings to the special designs of the architect. The whole work cost £10,263.

Sub-contractors were: Heating, C. P. Kinnell & Co.; lighting, Anderson, Angel & Co.; floors, Bennett's Tungit Flooring Co.; floor tiling, Martin van Straaten; brickwork, H. C. Parker; plastering, J. T. Hill; and stonework, Damer Bros., Ltd.

CHURCH OF ST. LAWRENCE, FELTHAM, MIDDLESEX. MR. THOMAS H. B. SCOTT, F.R.I.B.A., ARCHITECT.

VIEW FROM ELDON ROAD.

EASTBOURNE GIRLS' HIGH SCHOOL.

MR. LESLIE ROSEVEARE, M.Inst.C.E., BOROUGH ENGINEER.

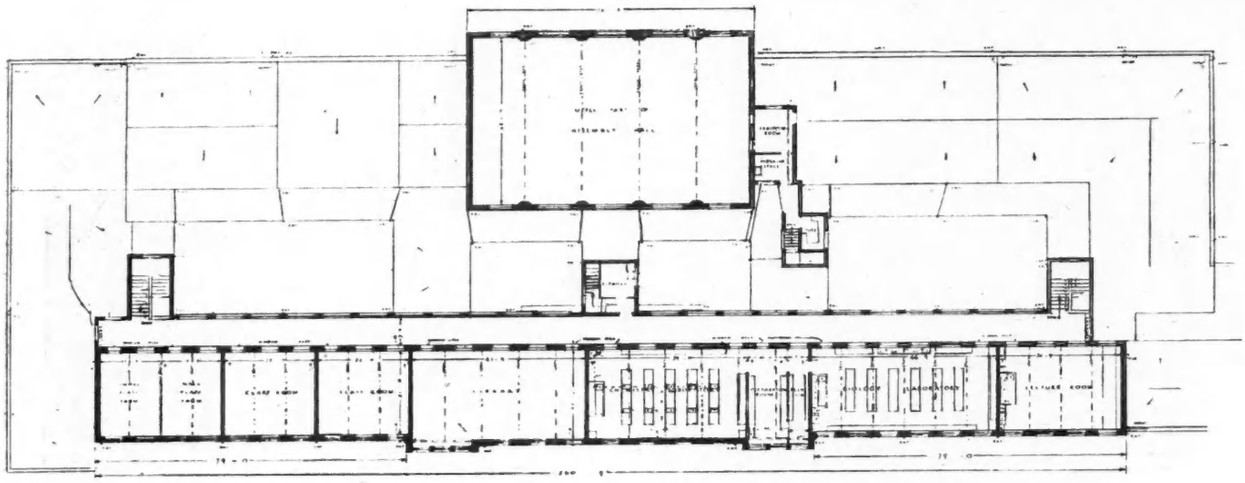
The Girls' Secondary School illustrated above has been erected on a site of eight acres in Eldon-road, and was occupied in September last.

The accommodation in the Senior School is 340 places (capable of extension to 460 places), and there is a Junior School and Kindergarten containing a further 160 places, with a caretaker's house adjoining. A large part of the basement forming the cycle stores was constructed to form a gas-and-splinter-proof air-raid shelter, and has functioned as such since the school was opened, temporary cycle sheds having been erected in the grounds.

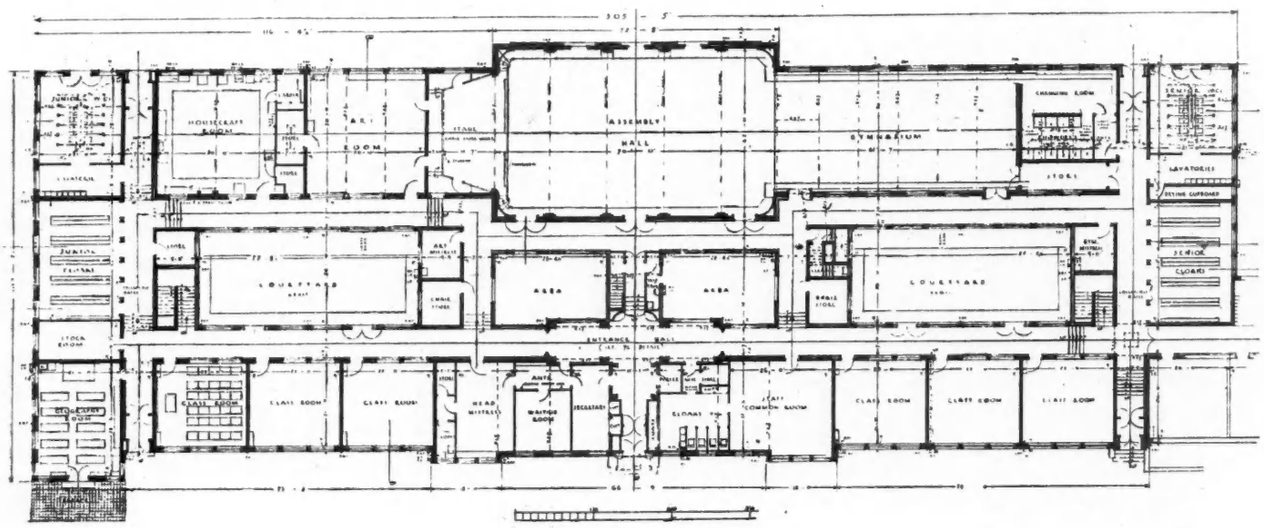
Construction generally is of brick cavity walls faced with Crowborough stocks, hollow tile concrete floors and tiled roofs. Floors of corridors, girls' offices and lavatories are finished with granolithic, and the classrooms are paved with teak wood block; oak block flooring is laid in the assembly hall and oak strip to the gymnasium. Classroom dadoes are of 1.90 mm. coloured linoleum capped with 18 in. wide display board. Wireless loudspeaker plugs are fitted to all teaching rooms served by a large-output receiving set in the assembly hall, and built-in loudspeakers are fixed in the hall and gymnasium, these latter two rooms being divided by a folding screen, enabling one very large room to be formed on the occasion of speech days, etc.

Talking-film wiring and equipment are provided to the assembly hall, with the projection room placed at gymnasium roof level. Heating is by low-pressure hot water, the boilers being fed by automatic stokers with thermostat control.

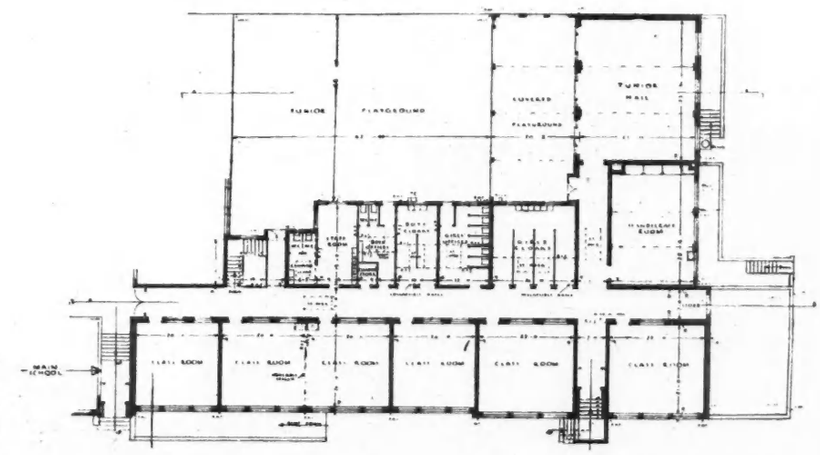
The accepted tender was £59,300, the general contractors being the Ringmer Building Works, Ltd., and the principal sub-contractors were as follows:—Asphalt, Limmer and Trinidad Lake Asphalt Co.; steelwork, Redpath Brown and Co., Ltd.; reinforced concrete, Diespeker and Co., Ltd.; reconstructed stonework, Blokcrete, Ltd.; metal windows, Jas. Couper and Co., Ltd.; heating, G. N. Haden and Son, Ltd.; electrical installation, Iverson Electrical, Ltd.; wood block flooring, Horsley Smith and Co., Ltd.; sanitary fittings, Stephen Bindon, Ltd.; locks and furniture, Lockerbie and Wilkinson, Ltd.; lighting fittings, Hume Atkins and Co., Ltd.; cloak room fittings, Samuel Parkes, Ltd.; internal telephones, Reliance Telephone Co.; and gates and railings, J. Henty.



FIRST-FLOOR PLAN OF SENIOR SCHOOL.



GROUND-FLOOR PLAN OF SENIOR SCHOOL.



GROUND-FLOOR PLAN OF JUNIOR SCHOOL. THIS "READS ON" TO THE GROUND PLAN OF THE SENIOR SCHOOL.

EASTBOURNE GIRLS' HIGH SCHOOL.

MR. LESLIE ROSEVEARE, M.INST.C.E., BOROUGH ENGINEER.

THE BUILDING INDUSTRY AND WAR SAVINGS

THE War Savings Committee of the Building, Civil Engineering and Allied Industries has issued a statement to all employers in the following trades: Building, Civil Engineering, Manufacturing of Building Materials, Supply of Building Materials, Sub-Contracting and Allied Trades, from which we take the following extracts :—

War Savings Campaign.

The tremendous speed at which war planes are now being produced in England, the Empire and America, the increased tempo of our armament production, and the rate of expansion of our armed forces, are continually forcing the cost of the war upwards. The Chancellor of the Exchequer recently announced that we were now spending at the rate of £9,500,000 per day. The gap between expenditure and the income derived from taxation and other sources is already wide. It is the duty of all of us to close that gap with our savings. The progress of voluntary savings has far exceeded all expectations, but can go further, and will prove itself of immense value to meet whatever will be required in the great task which lies ahead.

Representatives of the Building, Civil Engineering and Allied Industries have recently been invited to act as a War Savings Committee and are determined that the industries they represent shall take the fullest possible share in the campaign.

It is estimated that although there are two million people employed in these industries, yet there are only about 1,000 War Savings Groups in operation. It is evident that there is a vast amount of work to be done before it can be said that the War Savings Campaign is receiving the support which ought to be forthcoming from the industries concerned.

The General Council of the Trades Union Congress has in a recent declaration given its full and strong support to voluntary savings, and has urged upon all who are able to save to do so to the utmost of their ability, and to lend such savings to the country. This is now the moment for employers to give employees the opportunity of giving practical effect to that declaration.

The central feature of the War Savings Campaign is the Savings Group; a collection of people who regularly subscribe week by week part of their earnings for investment in National Savings Certificates, or for deposit in the Post Office or a Trustee Savings Bank. Since the campaign started over 62,880 of these groups have been formed in places of employment and thousands more are being established every week. There are several schemes which can be operated, but the two which have found the greatest favour among firms in these industries are the Savings Stamp scheme and the Employers' scheme.

How You Can Help.

The Committee, after consultation with representatives of the National Savings Committee, has authorised the issue of this Memorandum to all employers in the industries concerned, and makes the following recommendations :—

(1) That firms which have not yet formed a Savings Group should discuss the matter with an officer of the National Savings Movement, or of a local Savings Committee, choose the most suitable scheme, and take steps to enlist the support of their employees.

(2) That firms which already have a Savings Group in existence should stimulate its membership, and increase the rate of its subscriptions by one or other of the following methods :—

(a) By arranging for a meeting to be addressed by representatives of the firm, by responsible Trade Union officials, or officers of the National Savings Movement.

(b) By arranging for a circular to be sent to members urging increased support for the group; the display of posters, or the distribution of leaflets, which may be obtained from the National Savings Committee.

It has been found that where a director, a Trades Union official, or some influential person makes himself personally responsible for the success of the group, the most excellent results have been obtained. The Committee wish to stress the importance of such personal influence and persuasion in the successful running of War Savings groups, and confidently appeal to those engaged in these industries to do all they can to assist in this important work.

Signed—

GEORGE HICKS, President of the National Federation of Building Trades Operatives, Chairman.

H. T. HOLLOWAY, President of the Federation of Civil Engineering Contractors, Joint Vice-Chairman.

C. KERRIDGE, President of National Federation of Building Trades Employers, Joint Vice-Chairman.

A. H. ADAMSON, Past-President of the London Master Builders' Association; H. J. C. JOHNSTON, President of the Building Industries National Council; T. A. MCINTYRE, President of the National Federation of Specialists and Sub-Contractors, Committee.

W. T. CRESWELL, Hon. Secretary.

Full information may be obtained from the National Savings Committee, Sanctuary Buildings, Westminster, S.W.1.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Valuation and Measuring of Buildings for Insurance Purposes.

TO THE EDITOR OF *The Builder*.

SIR,—Building owners everywhere are realising how important it is that accurate assessments of war damage to their properties can readily be made.

The making of such assessments would be greatly helped if plans of the buildings before damage were available, particularly if such drawings gave constructional details. Records of most newer buildings are already in the hands of owners, architects, or local authorities, but records of older buildings can seldom be found.

In such cases owners would be well advised to instruct their architects to make surveys accurate enough to show plans, sections and elevations of the buildings before damage. Elevations might be photographed, but the plans and sections should be measured and drawn.

W. H. ANSELL,
President, R.I.B.A.

66, Portland-place, W.1.

The Saving of St. Paul's.

TO THE EDITOR OF *The Builder*.

SIR,—I have read with great interest your account of the saving of St. Paul's by Lieut. T. R. Davies and his men.

May I suggest that the architectural profession recognise in some fitting manner this act of gallantry which has saved (for the present, at any rate) one of our greatest architectural monuments?

S. D. MEADOWS.

35, Cromwell-road, S.W.7.

Society of Antiquaries.

By order of the President, the ordinary meeting of the Society of Antiquaries, fixed for October 17, has been postponed; an announcement concerning the meetings of the Society during the present session will be made after that date.

CONSTRUCTIONAL EXPORT GROUP

TRADE MISSION TO SOUTH AMERICA.

AT the first General Meeting held on August 29 last, the Export Group for the Constructional Industries was formally constituted and the Constitution and Rules adopted. There were elected Mr. G. M. Burt (John Mowlem and Co., Ltd.) as first Chairman, Mr. H. T. Holloway (Holloway Bros. (London), Ltd.) Senior Vice-Chairman, Mr. H. F. Brand (Charles Brand and Son, Ltd.) Junior Vice-Chairman, and Mr. Charles Kerridge (Kerridge (Cambridge), Ltd.) Honorary Treasurer, together with 13 ordinary members of the Council, as follows: James Geddie (Dorman, Long and Co., Ltd.); Major Braithwaite, D.S.O. (Sir Lindsay Parkinson and Co., Ltd.); R. R. Costain (Richard Costain, Ltd.); H. C. Harland (John Laing and Son, Ltd.); Capt. A. M. Holbein (Demolition and Construction Co., Ltd.); A. M. Hughes (The Tilbury Contracting and Dredging Co., Ltd.); Godfrey Mitchell (Geo. Wimpey and Co., Ltd.); Major A. D. S. Rice (Rice and Son, Ltd.); Norman Wates (Wates, Ltd.); J. L. Wild (J. B. Edwards and Co. (Whyteleafe), Ltd.); Spencer M. Reis; Clifford Trollope (Trollope and Colls, Ltd.); and Ald. H. E. Pitt, M.C., J.P. (H. E. Pitt, Ltd.).

Among the first matters which have received the attention of the Group has been an invitation from the Government to nominate a representative to join as an official member of the Trade Mission to South America. This Mission, which is shortly to sail under the chairmanship of Lord Willingdon, has as its primary object the "showing of the Flag" to South America. The Mission is not a large one, and some indication is given of the importance which the Government attach to overseas contracting by the fact that the Export Group for the Constructional Industries was one of the six Groups (out of the 270 that have been formed up to the present) which have been invited to nominate a representative to be an official member of the Mission.

The representative nominated by the Export Group is the Director of the National Federation of Building Trades Employers, Sir Jonah Walker-Smith M.P., a civil engineer by profession, and fully familiar with the objects of the Group. Sir Jonah should be well qualified to undertake this work both in the national interest and to the furtherance of the activities of the Group.

The recent agreement for the leasing to the United States Government of naval bases in British territories in the Americas is of great interest to the Export Group. It has been suggested that steps are being taken to secure that a proportion of this work is entrusted to British contractors, and it is believed that this suggestion is being seriously considered in official quarters. It is thought that the experience of British contractors in war works would be acceptable and of value to the United States Government.

Membership of the Group is open to all who subscribe to the rules, copies of which can be obtained from the Secretary, Mr. Howard A. Close, M.A., 82, New Cavendish-street, London, W.1. The present basis of subscription is temporary and consists of a token payment of 20 guineas.

CONCRETE IN HOUSING

2—FOUNDATIONS AND GROUND FLOORS

By EDRIC NEEL, M.A., A.R.I.B.A.

Foundations.

General.—With normal domestic construction the loads involved are not very great, with the result that house foundations are not usually subject to detail calculations; in fact, existing by-laws would appear to be based largely on traditional building practice.

However, if concrete is used in the floor and roof construction of a domestic building, the loads on the foundations will be increased, so that it may be advisable to review existing technique for foundations and consider what, if any, modification is necessary.

Types of Foundation.—There are two main types of foundation used in domestic work—independent foundations and the raft foundation. The term "raft" is perhaps not quite accurate, since a fully developed concrete raft is rarely necessary. When applied to domestic work the "raft" may be of comparatively light construction and could be more truly described as a widely spread tied foundation.

Independent Foundations.—The Ministry of Health Model By-laws lay down that where ground has a bearing capacity not inferior to firm clay or coarse sand, *i.e.*, approximately 3 tons per sq. ft., the width of the bottom of the foundation should not be less than 12 in., or twice the wall thickness, whichever is the greater. Further, the height from the bottom of the foundation to the base of the wall should not be less than 9 in., or one and one-third times the projection of the foundation from the base, whichever is the greater.

Assuming that the external wall of the house is an 11-in. brickwork cavity wall, and that, in accordance with the above by-law, the width of the bottom of the foundation is 2 ft., the foundation will safely carry a load of 6 tons per ft. run, which is more than adequate for loading due to a two-storey structure with brick walls and concrete floors and roofs. Thus there appears to be no necessity for brickwork footings, and the wall can continue down to the foundations without any increase in thickness, provided that the projection of the concrete beyond the wall is not excessive in relation to the depth of the foundation.

However, whether footings be inserted or not, it is essential that the foundation itself should be taken down to a good firm bottom. This applies not only to the foundations of external walls, but, where concrete first-floor and roof construction is used, to the internal walls as well. In normal brick and timber construction, the foundations to the 4½-in. internal partition walls are usually slight, but the added load on the walls due to concrete floor and roof construction necessitates a sound foundation in order to avoid differential settlement. The foundations of the 4½-in. internal walls should, therefore, be at the same depth as those for external walls.

Raft Foundations.—Raft foundations have been extensively used for domestic work, particularly where the load-bearing capacity of the ground is uncertain. Raft foundations have also proved their value on sites where subsidence may be expected, as over mine working or on marshy ground. In fact, there are many reasons why the light concrete raft should be seriously considered for all domestic buildings.

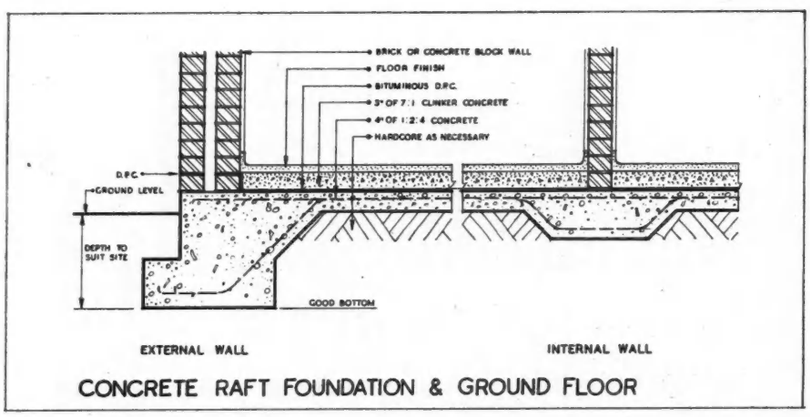
Apart from the function of the raft in spreading loads evenly over a large area, the raft serves to tie the base of the building together, whereas with the independent type of foundation, the only tie between cross-partition walls and the external walls is a brickwork bond.

Another advantage of the raft is that, if necessary, the portion of the raft immediately below the walls can be reinforced to act as a ground beam. The ground beam serves not only to distribute load evenly along the ground, but if any part of the ground below the foundation should settle unduly, the ground beam will act as a lintol over the settlement.

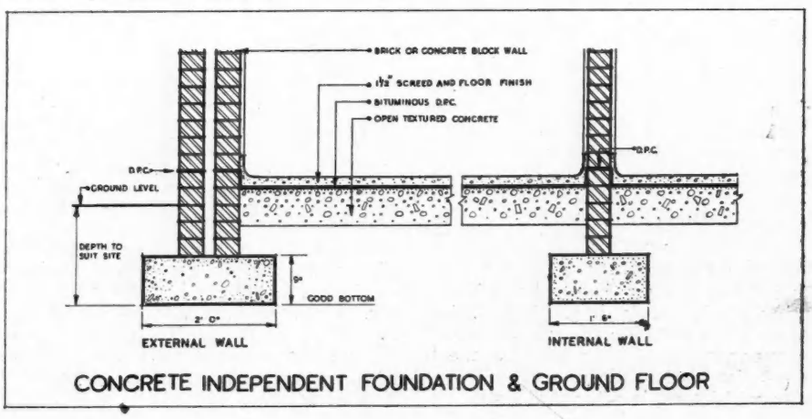
From a structural point of view, it would undoubtedly be better practice not only to tie the house firmly together at ground level by means of a light raft foundation, but also to provide ties of equal strength at first-floor and roof level.

In any house it is customary to have reinforced concrete lintols over door and window openings, and it is suggested that this lintol system might economically be extended into a series of inter-connected beams, forming a continuous wall plate.

In normal times, this wall beam serves a very useful function in distributing floor and roof loads evenly over supporting walls and in bracing the structure generally, but in war time this beam system is likely to be of great value. Experience gained from enemy air attack shows that bomb blast may destroy large areas of house walling; with normal construction, this may lead to the collapse of floors and roofs. If, however, there were a continuous series of beams or lintols, it is probable that such collapse would not occur, since the beams would provide sufficient support to floors and roofs even if comparatively large areas of walls were demolished. The value of framed buildings in resisting bombing is well known. Such evidence cannot be disregarded, and the application of at least a horizontal framing to normal house construction should be considered.



CONCRETE RAFT FOUNDATION & GROUND FLOOR



CONCRETE INDEPENDENT FOUNDATION & GROUND FLOOR

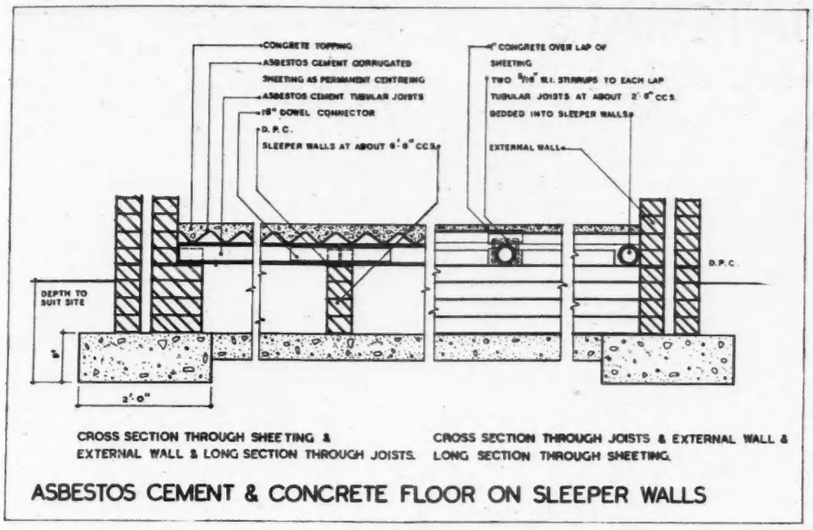
Ground Floors.

Solid Floors.—Where the ground inside a building is reasonably level, a concrete floor laid direct on the ground is far and away the cheapest and most satisfactory type of ground floor, provided that adequate precautions are taken to guard against rising cold and damp.

The Ministry of Health Model By-laws recommend that the ground surface enclosed within the external walls of a domestic building should be covered with a layer of spade-finished concrete 4 in. to 6 in. thick, and the drawings on this page illustrate typical combinations of site concrete and foundation concrete either in the form of a raft or as independent foundation and ground floor.

In order to guard against rising damp, a continuous damp-proof course should be placed over the whole surface of the ground floor and continue through external and internal walls.

This course may consist of a mixture of pitch and tar, asphaltic compound or bituminous sheeting tarred over. For the walls themselves, slates laid with broken


CONCRETE TOPPING
ASBESTOS CEMENT CORRUGATED SHEETING AS PERMANENT CENTRING
ASBESTOS CEMENT TUBULAR JOISTS
18" DOWEL CONNECTOR
D.P.C.
SLEEPER WALLS AT ABOUT 6'-6" CCS.
4" CONCRETE OVER LAP OF SHEETING
TWO 5/16" R.I. STIRRUPS TO EACH LAP TUBULAR JOISTS AT ABOUT 2'-6" CCS. BEDDED INTO SLEEPER WALLS
EXTERNAL WALL
D.P.C.
DEPTH TO SUIT SITE
2'-0"
CROSS SECTION THROUGH SHEETING & EXTERNAL WALL & LONG SECTION THROUGH JOISTS.
CROSS SECTION THROUGH JOISTS & EXTERNAL WALL & LONG SECTION THROUGH SHEETING.

ASBESTOS CEMENT & CONCRETE FLOOR ON SLEEPER WALLS

joints are probably still the most satisfactory type of damp-proof course.

One small point in connection with the damp-proof course in the external cavity wall should not be overlooked—that the wall cavity should continue below the damp-proof course. This will allow water running down the inner face of the external leaf of the cavity to collect and run off without flooding the internal leaf. To assist the draining of the cavity, certain of the vertical joints in the external leaf of the wall should be left open in order to allow moisture to run off without difficulty. These open vertical joints will also provide sufficient ventilation to the cavity walls, since it is now generally accepted that the provision of special ventilation to a cavity wall is not good practice.

The amount of moisture which would collect in the cavity depends, of course, upon many factors, such as the quality of the facing bricks and weather conditions, but the extension of the cavity below the damp-proof course would ensure that such mortar droppings as do collect at the bottom of the cavity will not form a bridge across which moisture may be transmitted to the inner leaf.

Two methods of preventing rising cold are shown in the drawings—a 2-in. to 3-in. layer of clinker concrete above the damp-proof course in the case of the raft foundation and the use of open-textured concrete in the case of the independent foundation. Open-textured concrete consists of one part of cement to 12 or more parts of coarse aggregate, varying in size from 1 in. to ⅜ in., with nearly all fines removed, and it is suggested that the open-textured concrete should take the place both of the normal hardcore and site concrete. It has been proved in practice that the granular composition of open-textured concrete prevents moisture being absorbed by capillary attraction.

Suspended Floors.—On sloping or irregular sites a great deal of excavation and levelling may be necessary to form the base for a solid ground floor. In such cases the site concrete would be stepped and the ground-floor structure consist of a concrete floor, either precast or *in situ*, resting on sleeper walls.

A detailed survey of the types of concrete construction suited to suspended floors will be given in the next article in this series, but here reference should be made to an interesting development of suspended ground-floor construction devised by Messrs. Turner's Asbestos Cement Co., Ltd., and illustrated herewith. The use of the asbestos cement pressure pipe as a load-carrying member means that no steel is required as reinforcement.

Ground-floor Finishes.—The damp-proof course lessens the bond between the site concrete and the ground-floor finish, and it is therefore essential that the floor finish be built up to a thickness sufficient to prevent lifting. Also, a certain thickness of topping is necessary to accommodate sub-floor electrical conduits and other service pipes.

If clinker concrete is used as a topping it can be blinded to receive a floor finish such as composition flooring, tiling, etc., or, alternatively, timber boards can be nailed direct into the clinker. In other cases, where rising cold is already prevented by the open-textured concrete, all topping above the damp-proof course should be at least 1½-in. thick, including screed and finish, *e.g.*, 1-in. screed, ½-in. grano; ½-in. screed, 1-in. tile. This thickness is sufficient to prevent lifting, but, as mentioned above, it may be necessary to increase this thickness to house pipes and conduits.

COMMUNAL SHELTERS

A.R.P. CO-ORDINATING COMMITTEE STATEMENT.

We have received the following statement from the A.R.P. Co-ordinating Committee :—

The A.R.P. Co-ordinating Committee, on October 3, asked Sir John Anderson to state what action is to be taken following the proposals put forward by them at their deputation to the Home Office on September 17. It will be recalled that this deputation, drawn from representative bodies in all parts of the country, and speaking for some 750,000 people, urged proposals on methods which should be adopted so as to secure rapidly really safe, bomb-proof shelters for the civilian population. The question of the provision of the necessary materials and, above all, of cement, was put forward at length, and a scheme was explained by the committee which would secure an enormous and immediate increase in the production of cement, by changing over to the production of Portland blast furnace cement, and by taking certain other steps.

While it appears that the Committee's proposals in relation to cement are likely to be followed by some Government action and that certain modifications in shelter policy have already been made and others contemplated, there is, as yet, no sign that the situation is to be tackled fundamentally and with the urgency that is absolutely essential.

The Premier stated on September 17, 1940, that the German have, as yet, employed only a part of their full air strength. It follows that, grave as the shelter position is at present, it becomes graver with every precious day that is wasted. Soon, with the long winter nights, conditions will be far worse for the people desperately seeking shelter.

In the provision of really bomb-proof shelters, the type advocated for so long by the committee, and now popularly christened "the Haldane Shelter," has a very big part to play.

To protect the population of the urban areas against direct hits from 500-lb. bombs a large amount of cement is needed, but if this Committee's recommendations were carried out, the output of cement could be raised well over 50 per cent. straightaway.

Therefore, this Committee say it is practicable to provide immediately the more hardly pressed areas with bomb-proof protection, especially if the shelters are supplemented by tunnel shelters, which require far less cement, in some places. Additional tunnels could, for instance, be driven from existing Tube tunnels and elsewhere drifts driven into hillsides. Again, existing tunnels could be converted, as in the case of Southwark, Ramsgate and the Aldwych spur.

There has recently been so much unemployment among miners that the Government has raised their age of reservation so as to draft them into the Armed Forces. This should be stopped immediately, so that the miners' special skill may be used where it is most needed.

However, while bomb-proof shelters are being constructed, there remains the problem of giving the safest emergency protection immediately to the maximum number of people.

In London, the Tube stations are already crowded to capacity. This capacity could be increased along with the standards of comfort if bunk beds were provided. The beds could be transferred to shelters as and when these became ready. It has been estimated by the Borough Engineer of Stoke Newington Borough Council (who have fitted bunks in some of their shelters) that only 7,000 tons of steel is required for each million persons. It is reported that the Government is actually starting on bunks made of wood. The possibility of installing single track working on certain sections of the line at night, and of "parking" special shelter carriages on the other track should also be explored.

Certain of the larger existing communal shelters are capable of strengthening to a considerably greater standard of safety, and some of them could even be made bomb-proof. This work should be immediately carried out.

There should be an immediate survey of all steel-framed and reinforced-concreted framed buildings. The safest of these should be selected, and, with a fairly small amount of constructional work, not only the basements but also certain portions of the other floors could be converted to give far greater safety than the standard form of communal surface shelter.

The powers to make use of private, factory and commercial shelters should be rigorously enforced, and if necessary extended so that the safest of these may be used to the utmost of their capacity.

In order to deal with the inevitable overcrowding of those shelters which are safe, and to minimise the bad effects on health and risk of disease, such shelters should be fitted with mechanical forced ventilation and with proper sanitation and other facilities.

The problem is big, but it grows bigger with every wasted day. We have the materials and technical resources, and we have the labour. Every obstacle in the way of construction of bomb-proof shelters must be swept aside.

BUILDING MATERIALS

OFFICIAL DISTRIBUTIVE SCHEME

In connection with the Builders' Materials Emergency Reserve for First Aid Repairs of Air Raid Damage, H.M. Office of Works have issued a circular over the signature of Mr. P. Donald, Chairman of the Distributors of Builders' Supplies Joint Council (D.B.S.J.C.), to the stockholders of the reserve in order to provide through the trade the utmost assistance to the various authorities concerned with first aid repairs of damage in tracing supplies of materials which are in the hands of the trade with a view to meeting requirements as quickly as possible and to safeguarding the reserve as much as possible.

Mr. Donald's statement is as follows :—

To the Selected Stockholders (D.B.S.J.C. District Controllers) of H.M.O.W. Emergency Reserve of Builders' Materials.

In order to facilitate the repair of air raid damage to buildings essential to war production, in addition to the repair of civil buildings and essential public utility plants contemplated when the reserve was authorised by Section 60 of the Civil Defence Act, 1939, H.M. Office of Works has asked the D.B.S.J.C. to provide through you in your district (see Appendix 1) a service which, while safeguarding unnecessary issues of materials from the reserve, will expedite the supply of first aid builders' materials for the rapid repair of damaged buildings so that the fullest production may be resumed with the minimum delay.

A preliminary draft of the scheme whereby all possible information in regard to our stocks shall be made available has already been sent you, and as the response to my inquiry has justified my faith in your co-operation, it will only be necessary for me to set out in detail the service which the Office of Works asks that you shall carry out and the conditions under which it will be rendered.

It has been decided that in addition to meeting the demands from the local authorities, housing authorities, public utility undertakings and the Office of Works district organisations it will be proper for the stockholders to issue on demand stores from the reserve to the duly appointed representatives of the Admiralty, Ministry of Supply and Ministry of Aircraft Production. A list of the authorities to whom it has been agreed to make the emergency reserve and the new advisory service available is attached (Appendix 2).

. The stockholder of the reserve will, on application for materials for the repair of air raid damage or for information in regard to materials available, obtain from his trade colleagues in his district details of the stocks available in their hands and will furnish this information to the parties authorised to ask for it. In addition, he will advise on the alternative types, sizes and materials available, which, in his opinion, will enable the authority to carry out the work. The tracing of supplies by the D.B.S.J.C. District Controller is not to be confined to the types held in H.M.O.W. Emergency Reserve, but should include any general trade advice that appears to be appropriate. It is anticipated that in most cases the emergency stockholder will be asked for the supply of certain materials from the reserve, but he will, from the knowledge that he has obtained of the stocks of materials in his district, put forward trade stocks to meet the demand. By this means it is clear that unnecessary competition from Government-owned stocks will be avoided, and that the reserve stocks will be preserved until the stage is reached when no other stocks are available for prompt delivery.

It is essential that any information in regard to trade materials should be furnished as a matter of the first urgency, and that the choice of supplier should be left to the purchaser. A list of the merchants in alphabetical order with the materials they have to offer should satisfy this requirement. If, notwithstanding the offer of trade stocks, the supply of materials from the Emergency Reserve is urged, the stockholder is advised to refer immediately to the H.M. Office of Works Liaison Officer (as shown in Appendix 1) for his support and instructions.

When recourse to the Emergency Reserve stocks is unavoidable and the full or complete stock of any items is demanded it is recommended that assistance should be obtained from other near-by emergency stockholders to supply part of the demand. This course should ensure that some stock will be available for any immediate recurrence of damage. It is recommended strongly that so far as is possible all stocks issued for air raid damage should be replaced as quickly as possible. Every assistance to obtain replacement stocks will be accorded by the D.B.S.J.C. and the Office of Works.

To enable this to be done the demands for materials for repair of air raid damage will be given to you on an official form, in duplicate, with a prefix as shown in Appendix 2, and a serial number. One copy will be retained by the supplier and the other will be forwarded to the D.B.S.J.C., who will take up with the Controls for assistance or licences for prompt replacement.

Appendix 1 (*ubi sup.*) is a complete list of districts, showing H.M.O.W. liaison officers; D.B.S.J.C. district controllers; and stockholders, with their addresses, telephone numbers and the areas for which they are responsible. Appendix 2 gives the names of members of the Local Reconstruction Panels of the different regions.

The parties authorised to ask for the assistance provided are, in the case of a local authority, the surveyor, and in the case of public utility corporations the engineer.

REPORT ON SHORTAGE OF ESSENTIAL MATERIALS

THE following is the text of a report from a Sub-committee to the A.R.P. Co-ordinating Committee with regard to the shortage of building materials.

Extent of Shortage.

The principal building materials which are used for air-raid shelters have hitherto been steel, cement, aggregate, bricks, and timber, and, attendant upon the adequate maintenance of supplies of these materials, has been an efficient haulage organisation. The shortage of the materials includes all excepting aggregate and a serious lack of haulage facilities.

The Sub-committee form the opinion that up to the present direct enemy activity has not been responsible for the change from an abundance of these building materials to one of extreme shortage. It has, however, taken note that the possibility of enemy activity may seriously endanger the productive capacity of the country and that the present situation may be very much worsened as a result of enemy military movements. Accordingly, the Sub-committee has taken a long view of the situation, and its proposals contain serious suggestions for immediately relieving the situation and for meeting the difficulties which will be present in the event of the enemy succeeding in damaging production and transport.

With the exception of timber, the Sub-committee feels that there is no real shortage of any of the materials in so far as the total amount of production is concerned, but the shortage has been created by the diversion of these materials for other purposes, principally military, that had not been hitherto demanded.

Haulage.

One of the present difficulties is that of haulage. So much rail rolling stock and road transport has been commandeered for military activities that there is an acute shortage, and one of the greatest difficulties experienced, even in districts where materials are actually plentiful, is that of getting them moved. This shortage is likely to continue under the present arrangements, and may be made more acute as time goes on. At present, builders of air-raid shelters and suppliers of materials for them have literally to fend for themselves and more or less to scramble to secure haulage to maintain adequate supplies for work. Naturally, this is a very wasteful method, for those with the greatest influence may secure some amount of service, and a good deal of bargaining goes on in order that supplies may be delivered. This is not economical as far as tonnage/miles are concerned, and contractors become loath to do anything that will jeopardise the haulage supply.

A good deal of wasted labour on sites results from this method, for there is nothing to prevent what road haulage is available from being restrained by contractors from working on other jobs in order that when stocks of building materials are made available to them they may then have the transport needed. One result of this is directly causing some interference with the supplies of materials, for the purchasing of more supplies than are immediately needed is practised in order that the transport may be used while it is available.

The position therefore becomes anomalous in so far as much material, principally bricks and aggregate, is sent to sites where work cannot be started for lack of, say, cement, and in others is kept standing for lack of, say, gravel and bricks.

The country suffers from this lack of organisation. The geographical situation of brickfields and cement manufactories plays a very important part in this. At least one-third of Portland cement is produced around the rivers Thames and Medway, and, to get this material into the West and North-West of England, coastal shipping has to be employed or railway transport utilised. The Sub-committee feels that with the depletion of rolling stock at the disposal of the country for its A.R.P. and other efforts, the inland channel and rivers should be exploited to the full. It is of very little importance to-day to argue the relative speeds of canal-borne compared with railway or road transport, because the time taken to move a cargo of cement by rail from one side of England to the other will use up so much rolling stock as to be almost prohibitive in practice. Five hundred tons of cement would take up fifty 10-ton trucks, whereas only ten 50-ton barges would be needed, and most usually the transport could be made in 100-ton barges.

As regards road transport, the Sub-committee would recommend that this be placed unreservedly at the disposal of the central authority that was organised to make proper use of it so that deliveries of materials could be arranged on similar lines to that of the railway system whereby road rolling stock would be instructed to take materials in any direction, and would be required to carry loads towards the starting point, and so avoid empty mileage. This is being practised very successfully by a few large road hauliers, but is almost non-existent as far as local haulage is concerned. In effect, the scheme would be run from a series of centres and would be virtually nationalised. There is a very serious source of supply in haulage in the hands of the military authorities.

If this were done, the Sub-committee are of opinion that it would release several thousand heavy lorries and trailers for the transport of materials.

Cement.

The manufacture of this material is almost entirely in the hands of two "rings," the A.P.C.M. and B.P.C.M. All works are said to be operating at full capacity, which may be estimated at from 160-170,000 tons per week. Normally, cement works carry some

reserves in silos, but apparently these are not sufficient to meet present requirements. The vast majority of this cement will be Portland cement; some Portland blast-furnace cement is produced in Scotland, and there is a small output of aluminous cement. Owing to the lack of bauxite, it does not seem possible to increase the output of the latter. There are, however, very considerable supplies of blast-furnace slag in the country, and an immediate increase of 50 per cent. in cement production could be obtained by going over to blast-furnace cement. This consists of ordinary Portland cement ground with granulated slag. It has been in use in Germany and Belgium for some years and details of its manufacture are readily available. There is a British standard specification for this material, allowing the use of 35 parts of slag to 65 parts of cement; the requirements as to compressive and tensile strengths are about the same as for Portland cement. It may be added here that this specification met with opposition from the Portland cement manufacturers, who also opposed the flotation of companies to make P.B.F. cement (E.G. United Cement Works, Ltd., 1926). Much of the work at Rosyth docks was done in P.B.F. cement, which is considered by many authorities to be superior to the ordinary Portland.

There are, of course, a few manufacturing difficulties to overcome. Blast-furnace slag in the crude state is not suitable for use, and must be granulated. By granulation is meant the breaking up of the molten slag as it issues from the furnace into glassy beads, in appearance like frothy sand. This is usually done in British practice by pouring into a large quantity of water. This gives a wet product which is expensive to dry. Obviously this must be avoided, and it is avoided in Continental practice by using an air-blast to granulate. It is not the place of the Sub-committee to give full details of how the material will be produced on the large scale, but we can show that this is one solution of the problem and can insist that immediate testing is instituted, together with a survey of grinding machinery so that this potential 50 per cent. increase in production may be made a reality.

A more rapid increase in output would probably be achieved by enlisting the aid of lime companies, thus avoiding added strain on the cement works. The lime industry in Britain has declined in recent years, with the result that there is a productive capacity far in excess of current output. Slag-cement (not to be confused with P.B.F. cement) is produced by grinding 15 per cent. of slaked lime with 85 per cent. of granulated slag. This material is excellent for constructional work, except under water. If we put the capacity of the lime works at 15,000 tons per week (actual production cannot be more than 7,000 to 8,000 tons) this means that 100,000 tons of slag-cement could be produced at these works. If we make allowance for some works being inconveniently situated with regard to slag supplies the output could not be less than 50,000 tons a week, or nearly one-third of present production. With regard to grinding machinery, apart from the scarcely used lime-grinding plants, there appear to be adequate supplies on the scrap and second-hand market.

We have shown that an enormous increase in cement production is possible. It is very probable that if our scheme were put into operation, a very considerable reduction in price would result. Both the increase in production and the fall in price would be a valuable help in converting Stage 1 of the Committee's shelter design to Stage 2. For the next few weeks, while the larger scheme is being organised, there should be rationing of cement and Codes of Practice should be immediately issued to allow the use of leaner mixes and "plums" in mass concrete fortification work and foundations where there are no tensile forces to be contended with. At the same time there should be an extension of the use of ready-mixed factory-produced concrete. This method allows the exact proportioning of mixes and cuts out the waste which is inevitable with small-scale hand-mixing.

Steel.

Upon the occasion of the Committee's visit to the Home Office, information was given to us disclosing the fact that the total allocation of steel for A.R.P. purposes was 11,000 tons per annum for the whole country. This is hopelessly inadequate, so much so that air-raid shelters are being erected all over the country using concrete to take deflection stresses, a practice that has never before been used in engineering generally.

The steel position has improved recently, and with a few changes the Sub-committee are of opinion that an ambitious programme of A.R.P. using steel could be commenced. British steelmaking could be very much improved and should be reorganised to cut out waste consequent upon reheating and loss because of the distance between rolling mills and blast furnaces. It is within the Sub-committee's knowledge that blast furnaces are out of work awaiting relining and are standing because of shortage of labour for the jobs. This could be rectified by labour being made available and supply priorities being given for the refractory materials.

Bricks.

The brick industry has become concentrated in a few units under the control of a few large producers. There is an abundance of labour amongst the local inhabitants of Middlesex, Bucks and Herts, and other countries throughout England where suitable clay has been worked for years, and the re-establishment of brickmaking could at once be put in hand without any loss to the country's military effort, since much of the labour is over military age. The expansion of the manufacture of sand-lime bricks could be made to the great advantage of the supply of building materials for A.R.P. The manufacture of slag bricks could also be developed, and much of the accumulated slag around blast furnaces could be used and at the same time abolish one of the biggest scandals of modern times. Bricks may be made from slag alone, lime-slag mixes or lime-granulated mixes. The process of hardening by steam at ordinary pressure or by blast-furnace flue-gas was at one time in operation at Baldwin's Iron Works in South Wales, and the cost of production in 1918 was estimated at 8s. to 13s. per thousand. For an expenditure of 20 h.p., 7,000 bricks an hour could be produced. Molten slag blocks have been used, but there is considerable expense attaching to the manufacture of this.

Timber.

Timber has been restricted principally for the use of doors and seats for air-raid shelters. This could be substituted by moulded synthetic resin reinforced with textile materials and with sawdust concrete. The careful design of timber shuttering makes for enormous saving in the timber usually employed. The scientific manipulating of concrete also saves considerable timber, making the shuttering more economical in its multiple use. It is possible that considerable resources could be opened to us by importing from the U.S.S.R.

Summary.

The Sub-committee is of opinion that, with proper organisation, there need be no serious shortage of materials for the construction of air-raid shelters, and the same remarks apply equally to haulage so that the distribution of materials could be carried out without stint.

Timberless Building Adopted in U.S. Houses.

Houses built on similar lines to those now being erected in some parts of Britain will soon be available for the habitation of 600 families in North Long Beach, California. They are designed for a life of 60 years.

As in this country, concrete is being used more extensively for floors, joists, window-frames and stairs, but the reasons for doing so are slightly different from ours. Whereas we have to conserve supplies of imported wood by reason of war, the Americans have found that battalions of termites are destroying thousands of their houses each year. Concrete defies the termite in the U.S.A. and reduces the risk of fire wherever the houses may be.

EXTORTIONATE RENTS

M.O.H. CIRCULAR.

THE following circular has been sent to Local Authorities by the Ministry of Health:

"I am directed by the Minister of Health to state that it has been represented to him that exorbitant charges are sometimes being demanded by way of rent, with the result that persons whose own homes have been destroyed or rendered unusable by enemy action have difficulty in obtaining accommodation. The Minister hopes that local authorities will keep a close watch for anything of this kind in their districts, and will take such action as the circumstances indicate to prevent advantage being taken of the present exceptional demand for accommodation in certain areas.

"In virtue of the Act passed on September 1, 1939, the great majority of dwelling-houses in the country (other than houses belonging to local authorities) are now subject to the provisions of the Rent and Mortgage Interest Restriction Acts, and there is a statutory limitation on the amount which may be demanded by way of rent. As regards unfurnished lettings, the legal rent payable for houses which were already subject to these Acts when the 1939 Act came into force is the rent payable on August 3, 1914, together with certain permitted increases; for all other controlled houses the legal rent is that payable on September 2, 1939, again with certain permitted increases (viz.: increases on account of subsequent structural alterations and improvements, and on account of increases of rates where these are paid by the landlord). The Rent Restriction Acts do not in general apply to furnished lettings, but they contain provisions which empower the Courts to order that rents for such lettings, so far as they yield more than the normal profit, shall be irrecoverable, and that any payments of rent which may have been made in excess thereof shall be repaid to the lessee. Landlords charging extortionate rents for furnished lettings are also liable on summary conviction to a fine not exceeding £100. Local Authorities are empowered to institute proceedings for any offence under the Rent Restriction Acts, and the Minister hopes that they will not hesitate to make use of this power whenever circumstances warrant.

"It is understood that in some instances owners of empty houses are refusing to let them because of the restrictions imposed by the Rent Restriction Acts on houses which are let, and are prepared only to sell. I am to remind the Council of the powers which have been conferred on them of requisitioning empty houses and to suggest that these powers might suitably be exercised in such cases, if the Council are satisfied that it is necessary on account of shortage of accommodation."

Community Camps for Homeless.

Mr. Robert Sanders, of Buckland Court, Betchworth, Surrey, a member of the Dorking and Horley Rural District Council, has made an offer of free land for the rapid building of bungalows for rehousing people whose homes have been destroyed by bombs. He writes to the Press:—

"I am prepared as a start to give free for the period of the war sufficient land for the erection of, say, 20 bungalow houses—three bedrooms and a kitchen—each with a quarter of an acre allotment.

"The rough details of the scheme would be as follows: (1) Houses at net cost, price of labour and materials, are estimated to be erected for £100 each; (2) except for doors and windows, only local estate timber need be used; (3) walls: studwork encased with Portland cement plaster reinforced with expanded metal; (4) 'Ruberoid' or asbestos roofs; (5) internal walls sheeted with 'Tentex' or other suitable material; (6) concrete or bitumen floors; and (7) electricity and water laid on and sanitary arrangements to be provided by the council.

"With good labour organisation—perhaps the War Office would permit the Pioneer Corps to be employed—under our experienced surveyor, I calculate that one house could be erected every three days."

EMERGENCY INQUIRY BUREAU

Questions from readers arising out of War-time difficulties and recent Emergency legislation will be answered by a special staff of contributors. Questions, which should be addressed to the Editor, should be accompanied by a stamped addressed envelope.

Steel Scaffolding: Correct Use of Ledgers.

SIR,—*When constructing the steel scaffolding to a building which is 87 ft. high, we fixed the steel ledgers 4 ft. 6 in. apart, raising the scaffold as we went and lowering it again as we came down for cleaning down the brickwork. It has now been suggested that in order to save material we could have taken away alternate ledgers as we raised the scaffold and refixed as we came down, thereby using less material. Do you consider that this action would have complied with Clause No. 2 of the Statutory Rules and Orders,* 1926, *No.* 738, *which reads as follows:—*

"*Sufficient material shall be provided for and shall be used in the construction of scaffolds, and when in place shall not be removed until the part to be removed is no longer required for working purposes, stability, or safety.*"

When the brickwork was completed and the cleaning down was begun, the men employed on the scaffolding would have a 9-ft. drop on to the next ledger, and consequently would somehow have to refix the ledger previously removed at, we consider, great danger to themselves. What we actually did, of course, was to leave the ledgers in 4 ft. 6 in. apart, and a few putlogs where necessary, in order to facilitate the lowering of the scaffold.

We shall be pleased to know whether you think that the suggestion made to us is practicable, or whether in your opinion we should have infringed the existing rules and regulations. READERS.

A correspondent writes :—

On a careful consideration of the method employed by the inquirers, I am of opinion that, having regard to the height of the building, the method employed was both practical and strictly correct. To have taken away alternate ledgers as the scaffold was raised would have so weakened the scaffolding as to render it unstable and eminently unsafe.

Having regard to the reason why the Rules quoted were framed, to have followed the suggestion would have been an infringement of them. An employer is obliged to consider the safety of his workmen. If any question of payment arises for the materials used in carrying out the practice and method adopted, that is easily recoverable by the inquirer in the circumstances. He is covered by the Rules.

OFFICIAL NOTIFICATIONS

Timber Charges.

The following notice is issued by the Ministry of Supply :—

All firms who consume timber are reminded that, under the provisions of the Timber (Charges) (Nos. 1 and 2) Orders, they are required to pay to the Timber Control a charge on the consumption of private opening stocks of imported timber. The term "private opening stock" covers all timber, not being "national stock" timber, which was held in the United Kingdom by any person immediately before July 1, 1940, and so far as consumers are concerned, relates mainly to stock acquired before October 4, 1940.

Every consumer liable to pay the charge must send a return of the amount payable, accompanied by a remittance, to the Timber Control Officer in the Area in which the timber is consumed. Copies of the prescribed forms of return are obtainable from Timber Control.

Distribution of Steel Supplies.

The Ministry of Supply has issued a new edition of the "Distribution of Steel Supplies" Booklet (No. 3). This brings the scheme up to date and also simplifies it. Copies may be obtained from Steel House, Tothill-street, S.W.1.

A.R.P. SCHEMES

LONDON.

DAGENHAM.—T.C. received Home Office and C.C. approval for 227 domestic surface shelters.—Council seeking approval for further 240 domestic shelters.—Approval received from Essex C.C. and M.H. for first aid post at Chadwell Heath, at £2,928.—Application made to Ministry of Home Security and Essex C.C. for 50-person shelter at Osborne Hall.—Sanction being sought for 100-person shelters in vicinity of each of the emergency feeding centres.—Tender of Allen Fairhead and Sons for erecting depots at St. Chad's and Old Dagenham Park, at £5,397, accepted.—Plans passed :—May and Baker, Ltd., 4 shelters, Rainham-rd.

DEPTFORD.—B.C. received approval to £227 15s. on decontamination laundry for protective clothing and £496 3s. 8d. for laundry for civilian clothing.

KENSINGTON.—B.C. recommend tenders for communal surface shelters as follow :—Griggs and Son, Ltd.—53 shelters for £5,138 15s.; Gee, Walker and Slater, Ltd.—38 shelters for £5,769 3s.; J. P. Williams, Ltd.—20 shelters for £2,399; J. P. Williams, Ltd.— public surface shelter in Brompton-rd., £405; wiring installation for external and internal lighting of communal shelters, Holliday and Son (Electrical), Ltd., £4,025 16s.—Council approved application to M.H. for sanction to borrowing additional £4,227 in respect of shelter trenches.

LEYTON.—T.C. accepted tender of C. E. Carter, of Romford, for 50 individual and 20 communal surface shelters.—Scheme being prepared for shelters at Baker's Arms vicinity.—Council received London Civil Defence Region approval to £1,043 for fencing entrances to shelters.

RICHMOND-ON-THAMES.—T.C. placed contracts with Bessant Brown, Ltd., for communal shelters, at £1,364, and Newson and Co. for construction of pit-type surface shelters, at £3,364.

STOKE NEWINGTON.—B.C. have agreed, subject to approval of Minister of Home Security, to installation of lighting in communal shelters, at £770.

WANDSWORTH.—B.C. recommend following: Foregoing accommodation for 2,900 persons, at £11,273, in addition to which it is proposed to provide a further 11 50-person shelters, at £2,145; quotation of £176 7s. each for 15 shelters of Tarslag, Ltd.; J. Garratt and Son, £203 per shelter, and W. W. Dawes, Ltd., £204 9s. per shelter; shelters in vicinity of Tooting Broadway, by Messrs. Mercer Taylor and Co., at £4,064; adaptation of existing premises, £12,420; surface and semi-sunk shelters, £13,418, contractors, Tarslag, Ltd., and W. W. Dawes, Ltd.; supplemental estimate of £30,000 in connection with further public shelters; R. Bilham and Sons, for 33 48-person, one 36-person, and 6 28-person and 2 12-person shelters, at £3,974 18s. 7d., and Kidd and Sons, in respect of 53 48-person, 2 36-person, 8 24-person and 2 12-person shelters, at £6,307 16s.; supply of pre-cast concrete units required in connection with communal domestic shelters from G. F. Speaker and Co., Ltd., and Atlas Stone Paving Co., Ltd., at 2s. 9d. per unit; A. Hubbard, Ltd., for waterproofing of Anderson shelters by further 4,000 shelters; James Carmichael (Contractors), Ltd., at 1s. 9½d. per yard super, for fixing net to windows of Council's buildings; erecting blast walls at Rates Hall at Municipal Buildings by Mercer Taylor and Co., at £344 19s.; additional accommodation at cemeteries for reception of casualties, by J. L. Kier and Co., Ltd.; communal domestic shelters, R. Bilham and Sons and Kidd and Sons.

PROVINCIAL.

ALFRETON.—U.D.C. to erect public shelters. Plans by H. Taylor, architect, Regal-chambs., Cavendish-st., Chesterfield.

ALNWICK.—U.D.C. instructed S. to prepare scheme for communal shelters.

BARNARD CASTLE.—U.D.C. propose shelters. Plans by H. White, S.

BATH.—T.C. to erect for M.H. shelter at hospital at £560.—Shelter to be provided in Assembly Rooms. Mowbray Green, architect.—Council approved £5,000 for strengthening shelter work at schools.—Domestic shelter accommodation to be provided at £1,428.—Plans passed :—Shelter, Westgate-bldgs.; shelter, Albany-wks.

BATH.—T.C. approved shelter by H.M.O.W. in St. Michael's school playground.

BILLINGHAM-ON-TEES.—J. H. Hill, S. to U.D.C., to erect blast walls at entrances to public shelters.—Council to construct brick shelters, at £3,750.

BIRCOTES.—West Riding E.C. to erect five 50-children shelters at infants' schools.

BLACKBURN.—Plans for 414 shelters for 18,365 persons submitted to Regional Officer for approval. Plans by W. Pickstone, B.E.

BLACKPOOL.—T.C. to erect domestic communal shelters. Plans by J. Drake, B.S.

BLACKWELL.—R.D.C. divided contract for seven public shelters between A. Farnsworth and Co., Columbra-st., Huthwaite and A. Mann, Sutton-in-Ashfield. Plans by A. H. Elliott, architect, Dale Close, Chesterfield-rd. South, Mansfield.

BOLDON.—U.D.C. to build cleansing station at £1,000 and have applied for sanction to concrete 1,155 shelters at £4,620. Plans by N. Hindmarch, S.

BORDER.—R.D.C. to make provision for domestic and public shelters.

BOSTON.—T.C. propose communal public shelters. Plans by D. C. Cockrill, B.S.

CAERNARVONSHIRE.—C.C. decided to spend £15,000 on approved schemes for shelters submitted by municipal, urban and rural councils.

CHELTENHAM.—T.C. approved: Marks and Spencer, shelter, 117-119, High-st.

CHESTER.—T.C. recommend application to M.H. for sanction to borrow £2,190 in respect of 18 public shelters, and £2,362 in respect of first scheme for public shelters in city.—Subject to approval of Senior Regional Officer, application to be made to M.H. for communal domestic shelters.—City S. to arrange for shelter accommodation at City Hospital, at £375, and shelter at Isolation Hospital, at £137.—City S. advertised for tenders for additional public shelters.—City S. been in communication with Associated British Cinemas, Ltd., with regard to erection of shelter at rear of the Regal cinema.—Tenders for shelters accepted as follows: H. A. Clegg and Son, Ltd., Chester, 6 shelters, £2,046 16s.; J. Parker, Chester, 4, £1,392 3s.; A. H. Moorcroft, Chester, 4, £1,441 5s.—City S. submitted scheme for 129 communal shelters giving accommodation for total of 6,155 persons in Newtown, Boughton, and lower part of Saltney, at £18,311.—City S. prepared scheme for 10 additional public surface shelters, 8 in vicinity of General Railway Station, and 2 on land behind 75, Foregate-st., at £3,860.—City S. to report on work necessary to adapt basement of Folliott House for shelter accommodation.

CHESTERFIELD.—R.D.C. placed following contracts for domestic communal shelters: 36 at Gleadless, J. H. Dyson, Hemper-la. and J. Smith, 90, White-la., Gleadless; 50 at Grassmoor, T. Beighton, Ltd., Station-rd., Brimington, near Chesterfield, and Kilburn and Co., Temple Normanton, Holmewood, Chesterfield; 400 at Frechville, W. Drabble and Co., Mosbrough, A. F. White, 198, Derby-rd., Chesterfield, J. H. Dyson, Hemper-la., and Reeves Charlesworth, Ltd., Holme-rd., Owlerton. Rest of Contractors of Sheffield. Plans by J. B. Wikeley, E. and S., Saltergate.

CLOWN.—R.D.C. to erect 10 public shelters at Creswell. Plans by W. J. Galiagher, S.

COLWICH.—Staffs C.C. to provide shelters for 280 scholars and domestic communal and public shelters.

COOKHAM.—R.D.C. to erect two communal shelters at Woodlands Park at £300.—H. E. M. Hobbs, architect, appointed to act as consultant, prepare plans, etc., and supervise construction of shelters.

DURHAM.—County E.C. to build school shelters at Pittington. Plans by F. Willey, 34, Old Elvet, Durham.

ESSEX.—C.C. recommend: E.C. to provide further air raid protection at elementary schools, at £30,000; shelter accommodation for patients and staff at County Hospital, Broomfield, and Black Notley sanatorium, at £1,802 and £2 495 respectively; shelter accommodation for patients and staff at Black Notley emergency hospital, at £1,520; protection for windows at 30 first-aid posts, at £400; decontamination centre in Harwich area, at £618; adaptation of premises at Heybridge as first-aid post,

at £225; repairs, alterations and additions to A.R.P. headquarters, and erection of a decontamination building, at £1,055; provision of 2 central depots, at Oldchurch, at £531, and Havering, at £929 19s.; protection of windows of Black Notley sanatorium, at a cost of £398; 18 shelters for 900 persons, at £3,745, at Braintree; basement shelters in Thurrock; blast wall to replace sandbag protection at Fairlop school, at £315; replacement of sandbags with concrete blocks at report centre and town hall, at £235, at Chingford; first-aid post at Chadwell Heath, at £2,928; surface shelter on Hythe Hill, Colchester, to accommodate 150 persons, at £600; shelter for 50 personnel at Oldchurch-rd. depot, at £180; adaptation of first-aid post at St. Andrew's hospital, at £330 7s.; decontamination laundry, at £252; drainage of trench shelters at Old Dagenham Park, Valence Park, Beacontree Heath, and Parsloes-av., at £800; 7 public surface shelters, each to accommodate 97 persons, at £2,037, at Ilford; public shelter for 2,000 persons at Redbridge Station, at £2,000; 4 surface shelters, each to accommodate 100 persons, at High-rd., Chadwell Heath, Station-rd., The Drive, corner of Rochester-gdns. and Freemantle-rd., Ilford, at £350 each; fencing public shelters at Leyton, at £1,043; public shelters for 500 persons each, at Leyton and Leytonstone L.P.T.B. stations; waterproofing 30,668 Anderson shelters in 13 districts; public shelters to accommodate 950 persons, at £2,850, in Romford; public shelters to accommodate 800 persons, at £2,400, in Hornchurch; public shelters to accommodate 250 persons, at £750, in Hornchurch; public shelter in vicinity of Council Offices, Benfleet, to accommodate 100 persons; shelter accommodation for 2,730 persons, at £8,917, in Brentwood; adaptation of 218 and 220, Chingford Mount-rd., Chingford, as surface shelters, at £150; surface shelters at Walthamstow, at £6,346 12s.; shelter accommodation for 250 persons in basement of 43 and 45, St. James'-st., Walthamstow, at £550; construction of communal and surface shelters in 13 various council districts; refuge rooms in 1,060 houses to shelter 8,582 persons, at £6,360, in Braintree and Bocking; refuge rooms for 4,650 persons, at £3,500, in Halstead, and house protection for 434 houses, at £1,519, in Tendring.

FLINTSHIRE.—C.C. propose 118 communal and 191 additional public shelters. Plans by R. G. Whitley (L.), County Architect, County-bldgs., Mold.

GREAT HARWOOD.—U.D.C. propose shelters and rest rooms at action stations for firemen.

HEMSWORTH.—R.D.C. to erect 200 public shelters.

HOUGHTON-LE-SPRING. — U.D.C. to erect by direct labour 168 domestic shelters. Plans by V. J. Hunter, S.

ISLE OF WIGHT.—C.C. to erect shelters at Lind-pl., London Hotel, Victoria-st., Dover-st., Winton-st., opposite Portlands Hotel, and at the School of Art, Ryde. Contractors are G. J. Whitewood and Son and Wheeler Bros.

KETTERING.—T.C. to erect surface shelters and public shelter at Silverwood-rd. and Victoria-st.

KIDDERMINSTER.—E.C. to erect shelters for 700 at Modern school, Habberley-rd.—Plans prepared for shelters at Hurcott-rd. schools.

LANCASHIRE.—E.C. to erect shelters to Council schools in Ormskirk and Skelmersdale districts. Plans by S. Wilkinson, county architect, Preston.

LANCASTER.—T.C. placed contracts for shelters at £5,000. Plans by F. Hill, City S.—Surface shelters, R. L. Dilworth, Ltd., Damside-st.; school shelters at Bowerham, C. Hodgson and Son, Belle Vue; Christ Church and Scorforth, A. V. Black, Sun-st.; Cathedral school, T. Johnson, Ltd., 86, Bowerman-rd. All contractors of Lancaster.—T.C. propose additional shelters on housing estates.

LEEDS.—All public air raid shelters, at the request of the Ministry of Home Security, are to be made gas proof. Number of trench shelters to have external water-proofing, at £1,252, and electric lighting, at £3,200. Scheme approved for public surface shelters in City Square for about 400 persons, at £2,200. Tentative proposals for shelter accommodation for about 2,500 persons in building in course of erection on site at junction of Albion-st. and The Headrow, at £5,750.

LIVERPOOL.—City Electrical E. to provide additional protection for certain substations.—Application to be made to M.H. for consent to borrow £1,303 in respect of shelters for elementary schools.

LLANDUDNO.—Council approved plans for shelter at Marks and Spencer, Mostyn-st.—Plans for provision of public shelters with accommodation for nearly 700 people prepared by W. T. Ward, E. and S.

LLANFAIRFECHAN. — U.D.C. propose public shelters in units of 24, 36, 48 and 120 on nine sites. Plans by R. J. Hughes, S.

MONMOUTHSHIRE.—M. Benjamin, S. to Abercarn U.D.C., received letter from Clerk to C.C. giving approval of a 50-unit public shelter. In addition, approval given in respect of eight public shelters, and Council were waiting for builders to sign contracts. Approval also given of 15 communal shelters in Crumlin.

MORPETH.—R.D.C. to provide shelters at East Chevington, Ulgham, Ellington, Lynemouth and Pegswood. Plans by T. T. Watson, Council Offices.

MORPETH.—J. Wilson, Ltd., Oldgate, Morpeth, contractor for communal shelters for T.C. Plans by F. K. Perkins, B.E.

NEWCASTLE, STAFFS.—R.D.C. to erect four 50-person public shelters at Audley and domestic communal type shelters in rural area.—T.C. propose public shelter for 50-100 persons at cemetery.

NORTHAMPTON.—B.E. to provide shelter for 50 persons each at two hospitals.

ORMSKIRK.—U.D.C. to erect 19 domestic communal shelters. Plans by E. J. Wright, S.

PETERFIELD.—U.D.C. to provide shelter accommodation for 350 persons.

PRESTBURY.—P.C. suggested to C.C. site as shelter for 100 visiting people, in addition to one in Bollin-gr. for residents.

ROTHERHAM.—T.C. to erect shelters at Municipal General Hospital, at £755, and alter old Fire station for A.F.S. at £550; and A.R.P. trenches in Herringthorpe Playing Fields.

RUNCORN.—R.D.C. to erect public shelters at Helsby, Frodsham, Moore, Sutton, and Halton. Plans by A. J. King, S., Castle Fields, Frodsham via Warrington.

RUSHDEN.—U.D.C. approved plans for shelters at Manton House, H. Eaton; at Slade House, G. W. Marriott; to factory, Tecnic Boot Co., Ltd.

SCARBOROUGH.—T.C. to build 39 communal shelters in Castle Ward, at £3,000.

SOUTHALL.—T.C. accepted tender of Messrs. Alfred Robinson for 24 communal shelters.

STAVELEY.—U.D.C. to erect communal shelters on 19 sites.—Scheme to be prepared for shelters for 500 at Middlecroft. Plans by J. B. McGaw, S.

STRETFORD.—T.C. resolved that, in substitution for sandbag barricades at four auxiliary fire stations, brick walls to be erected, at £275.—T.C. received formal approval from Regional Commissioners for first instalment of communal shelters.

UTTOXETER.—U.D.C. to erect public shelter for 96 persons. Plans by S. S. Proud, S.

WINDSOR.—T.C. approved plans for shelter at 23, Peacod-st. for Marks and Spencer, Ltd.

WORCESTERSHIRE. — C.C. to erect domestic communal shelters at Wythall, West Heath, Stoke Works, Stoke Heath, Stoke Prior, Romsley and Hunnington. Plans by H. Rowe and Sons, Acting County Architects, 38, Foregate-st., Worcester.

WORKINGTON.—T.C. propose shelters at fire stations at Harrington and Salterbeck.—T.C. to erect shelters at council schools. Contract placed with J. Gilmore and Son, builders, Banklands, for shelter at gas works Plans by A. B. Cooper, B.S.

SCOTLAND.

FIFESHIRE.—C.C. approved shelters, at £3,850. Plans by G. Sandilands, Architect, County-bldgs., Cupar.

GLASGOW.—Plans prepared for new cleansing station and A.R.P. buildings. Architect, T. Somers, Office of Public Works, and contractors, Hunter and Clark, Ltd., Glasgow. Cost, £1,406.—Plans prepared for shelters at Hillington. T. Somers, architect.

GREENOCK. — Corporation accepted tenders for A.R.P. shelters, etc. Plans by R. Miller, Burgh Architect and Surveyor. Electric lighting public shelters, Scottish Western Electric Co., Ltd., at £618 11s. 8d.; decontamination laundry, excavation, brick and mason works, J. and R. Kirk, Ltd., Greenock, £219 3s. 6d.; engineering fittings and installation, J. Coombe and Sons, Ltd., Glasgow, £149 5s.; Finnart school first-aid post, D. McEwing and Son, Ltd., Greenock, £239 15s. 9d.; shelters at Rankine Memorial Hospital, J. Preston and Sons, Ltd., Greenock, £297 16s.; shelters, Grosvenor-rd. housing scheme, J. and R. Kirk, Ltd., Greenock, £235; Craigieknowes school first-aid post, D. McEwing and Son, Ltd., Greenock, £174 12s. 3d.

GREENOCK.—Plans prepared for shelters at The Bow Farm housing scheme by J. T. Aitkenhead, Greenock, at £249; 10 shelters at Maukinhill housing scheme, by J. Preston and Sons, Ltd., Greenock; shelters on various sites, by W. Steel, Greenock; shelters at Strone Farm housing site, by Grant and Burns, Ltd., Glasgow, at £2,518.

LANARK.—Plans prepared by Mr. J. Stewart, architect, Albert-st., Motherwell-Wishaw, for shelters for Crosslaw Home Institution.

MOTHERWELL-WISHAW. — Plans prepared for 80 public shelters. Victor Wilson, architect, 39, Merry-st., Motherwell.—Plans in hand for 86 shelters. Architect is the Burgh E. and S.

PAISLEY.—T.C. likely to be asked to take up again with the Government the £125,000 scheme for tunnelling an air raid shelter for nearly 3,000 people.

BUILDING ILLUSTRATED

PUNCH'S HOTEL, DONCASTER.

This hotel, designed by Messrs. T. H. Johnson and Son, F.R.I.B.A., has been built by Messrs. Frank Haslam, Ltd., of Doncaster. Sub-contractors and suppliers included: Steelwork, Fleming Bros., Glasgow; facing bricks, Askern Brick and Tile Co., Askern; windows, Crittall Man. Co., Braintree; heating and ventilation, Arthur Roberts, Liverpool; electrical work, N. S. Milan, Doncaster; vacuum cleaning plant, British Vacuum Cleaning and Engineering Co., Ltd., London; decorative glass, Pilkington Bros., Ltd., St. Helens; lighting fittings, Allom Bros., Ltd., London; special joinery work and bar fittings, W. T. Brewitt and Son, Doncaster; sanitary fittings, Needle and Stovin, Doncaster; hard wood flooring, R. W. Brooke and Sons, Liverpool; expanded metal ceilings, Hy-rib Sales, London; concrete reinforcement, McCall and Co., Sheffield; faience, Rainfordware, Ltd., Rainford, Lancs; marble to entrance and steps, George Wright (Rotherham), Ltd., Rotherham; cooking apparatus, Fletcher Russell, Warrington; flood lighting, General Electric Co.; service lift, Evans Lifts, Ltd., Leicester; pre-cast stone, Armthorpe Station Sand and Gravel Co., Doncaster; revolving doors, Samuel Elliott and Sons (Reading), Ltd.; and refrigerators, British Automatic Refrigerators (1923), Ltd., Sheffield.

Cost-plus Contracts, Manchester.

Manchester City Architect submitted a report to the City Council with reference to a communication received from the Moseley Construction Co., Ltd., general contractors for the erection of the Wythenshawe bus garage, making application—on account of the extreme difficulty in executing the work owing to Government control of the consumption of cement, timber, iron and steel—for the existing amended contract to be cancelled and the whole of the work from the commencement of the contract to be executed on a cost plus percentage basis, using the prime cost form of contract published by the Ministry of Home Security to form the framework of a new agreement. The Town Clerk, Treasurer and City Architect are to negotiate with the company for a new agreement on a cost basis plus a fixed profit.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A.) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A.; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING.

OCTOBER 12.

Okehampton R.D.C.—Public conveniences at North Tawton. L. R. Chapman, Building S., 1, Station-rd. Dep. £1 1s.

†**Salisbury and Wilton R.D.C.** — Fire station. Bothams and Brown, chartered architects, 32, Chipper-la., Salisbury.

OCTOBER 14.

Coventry T.C.—164 non-parlour two and three-bedroom houses. D. E. E. Gibson (A.), City Architect, 1a, Warwick-row. Dep. £5 5s.

Coventry T.C.—Guild House, Sherbourne-st. D. E. E. Gibson, City Architect, City Architectural Dept., 1a, Warwick-row. Dep. £3 3s.

Wakefield R.D.C.—50 surface shelters W. E. Massie, E. and S.

OCTOBER 16.

Chatham T.C.—Lavatories. R. L. Honey, B.E.

Erith T.C.—Surface and trench shelters. J. H. Clayton, E. and S. Dep. £1 1s.

Kettering T.C.—Demolition of two blocks of timber-lined trench shelters in North Park. Acting B.E. and S., 3, Gold-st.

Kirkcaldy T.C.—Constructing screens for protection of glass and blacking-out of windows at Museum and Libraries. B.E.

Liverpool T.C.—Proposed X-ray building, Broadgreen Sanatorium. City Architect and Director of Housing, Blackburn-chams., Dale-st., Kingsway. Dep £2 2s.

Plymouth T.C.—9 wardens' posts. City Architect.

York T.C.—Mortuary at St. George's Field. C. J. Minter, City E.

OCTOBER 17.

Cowbridge T.C.—Public lavatories. A. W. Gwyn, T.C.

Rochdale T.C.—Painting work at maternity home and hospitals. B. S.

OCTOBER 18.

Farnborough U.D.C.—22 two-bedroom, 22 three-bedroom and 6 four-bedroom houses at Rafborough. I. C. Jenkins, E. and S. Dep. £3 3s.

OCTOBER 21.

Welshpool T.C. — Slaughter-house. S., Broad-st. Dep. £2 2s.

OCTOBER 26.

Stroud R.D.C.—Central fire station. R. Bird, E. Dep. £2 2s.

OCTOBER 28.

Blackwall R.D.C.—Shelters. A. H. Elliott, Dale Close, 100, Chesterfield-rd. South, Mansfield. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, HEATING, &c.

OCTOBER 14.

†**Newcastle-upon-Tyne T.C.**—Removal of existing glazing and provision of new patent glazing over five entrances at the Grainger Market and Arcade. City Estate and Property Surveyor.

Newton Abbot R.D.C.—External painting of 130 houses. W. Sadler, Clerk, Kingsteignton-rd.

Sunderland C.B. Electrical installation work. B.E.

Sunderland C.B.—Electrical installation, sub-fire station. B.E.

OCTOBER 15.

West Riding C.C.—Internal decorations at county institution, Grenoside, near Sheffield, and coloured asphalt flooring at county institution, Knaresborough. Alfred Booth (A.). Acting West Riding Architect, County Hall, Wakefield.

OCTOBER 21.

Manchester T.C.—Taking down old warehouses in Tib-st., Scholes-st. and Foundry-la. City Architect. Dep. 10s. 6d.

MATERIALS.

OCTOBER 16.

Belfast T.C.—Plumbing materials. Estates Superintendent, Room 70, City Hall.

OCTOBER 18.

South African Railways and Harbours Administration.—Leadless white paint in paste. Chief Stores Superintendent, Purchase Section, Room 3, Park-chambs., Rissik-st., Johannesburg. Dept. of Overseas. (Ref. T. 21797/40.)

OCTOBER 19.

Preston C.B.—Five tons of genuine English stack-made white lead, ground stiff in refined linseed oil. H. E. Nutter, T.C.

NOVEMBER 14.

South African Public Works Dept.—Electric light fittings for new Magistrates' Courts at Johannesburg. Chairman, Union Tender and Supplies Board, P.O. Box 371, Pretoria. Dept. of Overseas Trade, S.W.1. (Ref. T. 21976/40.)

ENGINEERING, IRON AND STEEL.

OCTOBER 19.

Bridgwater T.C.—About 500 lin. yds. of 27-in. dia. acid-resisting stoneware pipe sewer, together with manholes, an outfall bay below high water in River Parrett, and other appurtenant works. John Taylor and Sons, engineers, Caxton House, Westminster, S.W.1. Dep. £5.

North Cork Board of Health and Public Assistance.—Millstreet water supply scheme. D. C. Murphy, Sec., County Hospital, Mallow. Dep. £20.

FEDERATED EMPLOYERS'
Insurance Association Ltd.
(non-tariff)
Head Office:
8, King St., Manchester
London Office:
23, Lawrence Lane, Cheapside, London, E.C.2
All Classes of Insurance Transacted
(Except Life and Marine)
The Leading Office for
Contract Guarantee Bonds

OCTOBER 30.

South Molton R.D.C.—Pumphouse sedimentation tank and filter beds for water supply scheme. Rofe and Raffety, engineers, 42, Salisbury-av., Cheam. Dep. £1 1s.

NOVEMBER 21.

South African Public Works Dept., Johannesburg. — Ventilating plant, new General Post Office, Cape Town. Chairman, Union Tender and Supplies Board, P.O. Box 371, Pretoria. Dept. of Overseas Trade. (Ref. T. 22061/40.)

ROAD, SEWERAGE AND WATER WORKS.

OCTOBER 12.

Manchester T.C. — Draining, flagging (artificial), kerbing and paving (tarred limestone) at Worthing-st., Moston. Highways Department (District Surveyor's Office), Town Hall. Dep. £1 1s.

Shadforth and Sherburn Joint Burial Board.—Laying out of approximately one acre of land at Shadforth as a burial ground. W. Atkin, Clerk to Board, South View, Thornley, Durham. Dep. £1.

OCTOBER 14.

Staffordshire C.C.—Making-up Harborne-rd., Cheadle. C.S., Stafford. Dep. £1 1s.

OCTOBER 17.

Staffordshire C.C.—Widening of Fauld-la., near Tutbury, for a distance of 1,900 yds. C.S., Stafford. Dep. £2 2s.

OCTOBER 18.

Farnborough U.D.C. — Construction of carriageway, kerbing, footways, verges, surface-water drainage and other incidental works on Rafborough estate. I. C. Jenkins, E. and S. Dep. £2.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies Registry.

F. AND C. LEACH, LTD. (363,384).—Registered September 28. Builders and contractors, etc. Nominal capital, £2,000. F. D. Leach, "Northstead," Park-lane, Pontefract.

JOHN E. CLARK AND CO., LTD. (363,342).—Registered September 25. 6-8, Stroud Green-road, N.4. Builders' and decorators' merchants. Nominal capital, £2,000.

M. and E. EQUIPMENT (CONSTRUCTIONS), LTD. (363232).—Registered September 13. 31, John-street, Bedford Row, W.C.1. Surveyors, decorators, builders and erectors of camouflage material. Nominal capital: £10,000.

TRIMITE, LTD. (363,313). — Registered September 20. Amersham-road, Harrow. Paint manufacturer and merchant. Nominal capital: £1,000.

PADDOCK CONSTRUCTION CO., LTD. (363,306). Registered September 20. 61-3, St. Paul's Churchyard, E.C. Nominal capital: £2,000. W. Manning, 19, Maidstone-avenue, Romford.

CAMLEY ENGINEERING CO., LTD. (363,315). Registered September 21. 9, St. Martin's-crescent, Leeds, 7. Proprietors and hirers of dumping, excavating and concrete-mixing machines, contractors, etc. Nominal capital: £1,000.

Newcastle-upon-Tyne Shrievalty.

Councillor T. Clements, managing director of Messrs. T. Clements and Sons, builders and contractors, Newcastle-upon-Tyne, has been appointed Sheriff of Newcastle for the coming municipal year.

Mayoral Elections.

Alderman Richard Ashton, who carries on business as a building contractor at Bridgwater, has accepted a unanimous invitation to the Mayoralty of the borough. He has been connected with the Town Council for 15 years, and has been an Alderman since 1937.

Councillor Herbert Baggaley has accepted an invitation to be the next Mayor of Mansfield. He is President of Mansfield and District Building Trades Employers' Association.

CURRENT AND PROPOSED BUILDING WORK*

Bath.—T.C. approved: Electricity sub-station.

Berwick.—Guardians Committee to carry out improvements to Institution.

Brighton.—T.C. approved: 7 bungalows, Patcham, Jack Middleton Rutter.

Chesterfield.—M.H. sanctioned borrowing of £8,305 for extensions to police headquarters.

Chesterfield. — T.C. approved: Works extensions, Robinson and Sons, Ltd., Wheatbridge Mills; works extensions, British Thomson-Houston Co., Ltd., Crown House, Aldwych, London, W.C.2.

Corby.—U.D.C. applying for sanction to borrow £26,000 for 40 houses, Oakley-rd. site.

Coventry. — T.C. approved: Licensed premises, corner of Sheriff-av. and Templars Fields, Atkinsons Brewery, Ltd.; extensions to factory, stores and lavatory block, Bannerla., A. C. Wickman, Ltd.; extensions to St. Francis Church hall, Links-rd., Bishop of Coventry's Appeal Committee; extension to works, British Piston Ring Co., Ltd.; extensions to sub-station, Corporation.

Durham.—County E.C. decided to set up canteens at large number of schools. Plans by F. Willey, 34, Old Elvet, Durham.

Grantham.—Methodist Union Trustees propose church and Sunday schools. Plans by H. W. Kelham (A.), 14, All Saints'-pl., Stamford.

Kensington.—B.C. given instructions for northern end of basement of new library building to be completed for use as offices by Borough Treasurer's Department and southern end for use as lecture or committee rooms, at £500.—Council granted application by R. Adair and Co. to reconstruct disused brick and timber building belonging to Council at depot.

Lancaster.—T.C. in conjunction with Lancashire C.C. propose a maternity unit adjacent to Royal Infirmary. Plans by F. Hill, City S.

Leyton.—B.S. to carry out colour washing exterior walls of blocks of flats and flats in Jesse-rd.—M.T. approved Council estimate of £25,652 for road work in 1940-41.

Liverpool.—T.C. recommend £900 for lavatory block and new bathroom, and conversion of billiards room and bedrooms into dormitories at Nautical Training School, Heswall.—Sanction of M.T. to borrowing by Corporation of £18,600 for extension of tramway offices.—M.H. forwarding formal consents to borrowing of £9,200, £1,260 and £380 in connection with 20 experimental non-timber houses.—Council sanction proposed building in connection with engineering workshop.—City Architect to proceed with construction of sub-station.—Council to renew certain tramway tracks, at £3.112, and construct tramcar siding, at £15,000.

Llandudno.—Council approved:—Alterations to Sefton House for Crosville Motors.

Maidenhead.—T.C. approved: Additions to "East Arms" hotel, Hurley, for H. Bay.

Mansfield.—T.C. approved: House for Notts C.C. E. W. Roberts (A.), County Architect, Nottingham.

Maryport.—U.D.C. asked by M.H. to build 50 houses. U.D.C. to ask North-Eastern Housing Assn., Metrovick House, Northumberland-rd., Newcastle-on-Tyne, to arrange for erection.

Morecambe and Heysham. — Justices approved plans: Alterations and improvements to Winter Gardens and Floral Hall for directors.

Newcastle-on-Tyne.—City Council to install heating and hot-water supply in connection with extensions to City Mental Hospital at Coxlodge. Plans by R. G. Roberts, City Architect, 18, Cloth Market. No contracts let.—E.C. to carry out alterations to Wharrier-st. and Middle-st. schools. Plans by Education Architect, Northumberland-rd.

Newcastle, Staffs.—T.C. approved plans: Machine shop to works, Smithfield Garage Co.—E.C. propose gymnasium to Westlands modern school. A. Cotton, Schools' Architect, Municipal-bldgs.

Northampton.—T.C. approved: Extension to laundry and new boiler-house, the Electric Laundry (Northampton), Ltd.: store, Church and Co., Ltd.; addition to boot and shoe factory, W. Barratt and Co., Ltd.

Rotherham.—T.C. in conjunction with M.H. proposes to adapt premises at Wath-upon-Dearne for annexe to Rotherham General Hospital. Plans by V. Turner, B.E.—T.C. approved: Building works, South Yorkshire Chemical Works, Ltd.

Sheffield.—T.C. propose adaptation of hotel for headquarters for Special Constabulary, Police War Reserve and the Police War Duties Dept.—T.C. propose highways depot on Walkley housing estate.

Stretford.—T.C. approved: Works extension, Eastnor Electric Co., Ltd.; canteen extension, Switchgear and Cowans, Ltd..

Taunton.—T.C. approved: alterations to factory, Herbert-st., Avimo, Ltd.; shelter, 40, Fore-st.. Marks and Spencer, Ltd.; garages and stores, Colborne's Estates, Ltd.

Tyldesley. — Co-operative Wholesale Society, Ltd., 1, Balloon-st., Manchester, propose meat packing factory and abattoir. Plans in Architects' Dept., 1, Balloon-st., Manchester. W. A. Johnson (F.), Architect.

Windermere.—U.D.C. approved:—Additional classrooms, grammar school.

Windsor.—Plans approved by T.C.:—Alterations for Findlater Mackie and Todd.

Workington. — T.C. approved: Semi-detached houses for Harrington Magnesite Works Co.; extensions to laundry, West Cumberland Steam Laundry Co., Ltd.

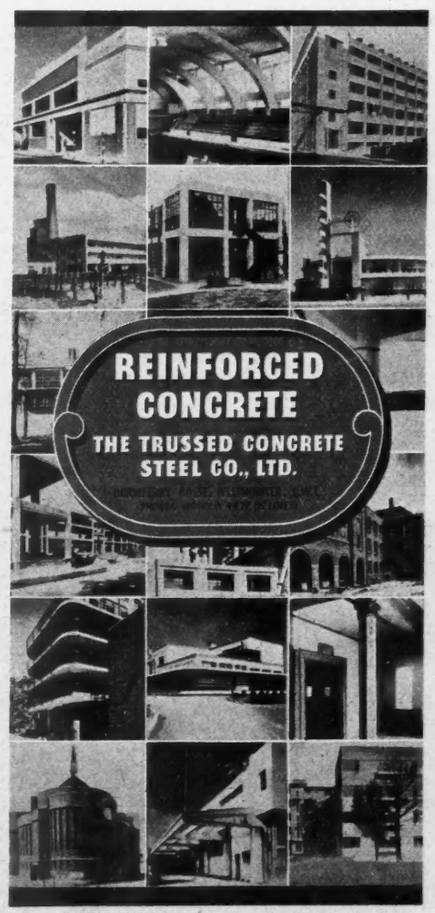
York.—Additional work at Assembly Rooms, proposed by Corporation's Estates Committee.

NEW BUILDINGS IN LONDON

DAGENHAM.—BUILDING.—The T.C. has approved the following plans:—Briggs Motor Bodies, Ltd., office and paint store, decontamination unit, offices, canteen and shelters.

LEYTON.—HALL.—The trustees of Grove Green-road Hall have had plans approved by the T.C. for a new public worship hall.

LEYTON.—EXTENSIONS.—The T.C. has approved plans prepared by Mr. R. J. Coles, architect, for an extension to a factory.



4-488A.

NATIONAL SURVEY OF FIXED AND DEMOLITION SCRAP

FOLLOWING the statement of the Ministry of Supply that a National Survey of all large iron and steel scrap is about to be undertaken, a meeting of Local Government officials, surveyors and sanitary inspectors was held at the Shire Hall, Taunton, on Tuesday, September 24, at which the policy was outlined.

Mr. M. H. Perry, on behalf of the Director of Scrap Supplies, said that the County of Somerset, including the Bath County Area and the Boroughs of Taunton and Weston-super-Mare, together with the County of Glamorgan and its appropriate authorities, had been selected as the first areas to conduct and test this important National Survey.

A set of guiding notes, Survey Cards and Information Slips had been supplied to every surveyor and sanitary inspector. Basically, the survey was designed to reveal and to record all the larger items of fixed or demolition scrap, varying from disused water towers to condemned bridges and from derelict factories to any large and disused steel structures of any and every kind. One of the white Survey Cards should be filled up for each bridge, derelict building or large scrap item so located; and these cards would later form the Central Record, giving a comprehensive survey of the whole of this potential scrap material throughout the county.

Now with regard to the Information Forms: these were not a part of the National Survey procedure. They were supplied in answer to the many requests from surveyors and inspectors for some simple and speedy method by which they might report those smaller items and accumulations of loose scrap iron and steel which they knew to exist in their areas.

The fixed or demolition scrap which they would report on the survey cards was, as it were, their reserve, and therefore might not all be collected at an early date; on the other hand, the loose and general scrap would probably be collected sooner and, indeed, would be called upon immediately it was needed and could be cleared economically.

To obtain a clear conception of the different scrap groups it would be advisable to think of them under three main headings:—

FIRSTLY, GENERAL SALVAGE AND DOMESTIC SCRAP.—This was the material which was already being collected by local authorities, by voluntary organisations and by the Village Dumps Scheme. They would *not* report any dumps or any collections of such material on their cards or forms.

SECONDLY, LOOSE SCRAP.—The sheet bearing this title would explain the type of material under this heading. It varied from old pumps and water tanks to disused agricultural implements, and accumulations of scrapped equipment on estates and farms. This type of scrap should be reported on the Information Forms, and it would be investigated and, if necessary, cleared fairly soon.

THIRDLY, FIXED OR DEMOLITION SCRAP.—This was the material for which the National Survey was intended, and which they would report on the Survey Card. It was our larger national reserve, and as such it must be located and recorded.

At the end of each week their Survey Cards and Information Slips should be placed in one of the official envelopes supplied to them and sent to Mr. Dewhurst, who, with the kind collaboration of Colonel Stead, had agreed to act as Information Collecting Officer. Bath, Taunton and Weston-super-Mare officers had also agreed to send these cards to Mr. Dewhurst, since this would help the Control by giving one central point in each county at which information was collected and directed.

I.H.V.E. Change of Address.

Owing to enemy action, the Institution of Heating and Ventilating Engineers have had to vacate their premises at No. 22, Russell-square, W.C.1. Their temporary address is 21, Tothill-street, Westminster, S.W.1. Telephone: Whitehall 9609.

* See also List of Contracts Open.

*** **In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st JUNE, 1940

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors]

	Craftsmen.	Labourers.
Aberavon	1/9	1/4½
Aberdare	1/9	1/4½
Abergavenny	1/9	1/4½
Abingdon	1/7½	1/3
Accrington	1/9	1/4½
Aldeburgh	1/5½	1/1½
Aldershot	1/7½	1/3
Alfreton	1/9	1/4½
Alnwick	1/8½	1/3½
Altrincham	1/9	1/4½
Amble	1/8½	1/3½
Amersham	1/7½	1/3
Ammanford	1/9	1/4½
Andover	1/7	1/2¾
Ardingley	1/7	1/2¾
Arundel	1/7	1/2¾
Ascot	1/7	1/2¾
Ashby-de-la-Zouch	1/9	1/4½
Ashford (Kent)	1/7	1/2¾
Ashford (Middlesex)	1/9	1/4½
Ashington	1/8½	1/3½
Ashtead	1/9	1/4½
Ashton-under-Lyne	1/9	1/4½
Aylesbury	1/7	1/2¾
Aylsham	1/6	1/2
Bagshot	1/7	1/2¾
Banbury	1/7	1/2¾
Barnsley	1/9	1/4½
Barnstaple	1/7	1/2¾
Barrow-in-Furness	1/9	1/4½
Barry	1/9	1/4½
Basingstoke	1/7	1/2¾
Bath	1/8½	1/3¾
Batley	1/9	1/4½
Beaconsfield	1/7½	1/3
Beccles	1/5½	1/1½
Bedford	1/8½	1/3¾
Berkhamsted	1/7	1/2¾
Berwick	1/8½	1/3¾
Beverley	1/9	1/4½
Bexhill-on-Sea	1/7½	1/3
Bideford	1/7	1/2¾
Biggleswade	1/7	1/2¾
Billericay	1/6½	1/2½
Birchington	1/7	1/2¾
Birkenhead	‡§1/11	¶
Birmingham†	1/9	1/4½
Bishop Auckland	1/9	1/4½
Bishops Stortford	1/8	1/3½
Blackburn	1/9	1/4½
Blackpool	1/9	1/4½
Blyth	1/9	1/4½
Bognor Regis	1/7	1/2¾
Bolton	1/9	1/4½
Bournemouth	1/8	1/3½
Bracknell	1/7	1/2¾
Bradford	1/9	1/4½
Bradford-on-Avon	1/6	1/2
Braintree	1/7	1/2¾
Brentwood	1/8½	1/3¾
Bridgwater	1/7½	1/3
Bridlington	1/8½	1/3¾
Brighouse	1/9	1/4½
Brighton	1/8	1/3½
Bristol	1/9	1/4½
Broadstairs	1/7	1/2¾
Bromsgrove	1/8½	1/3¾
Buckley	1/9	1/4½
Bungay	1/5	1/1½
Burnham-on-Crouch	1/5½	1/1½
Burnley	1/9	1/4½
Burslem	1/9	1/4½
Burton-on-Trent	1/9	1/4½
Bury	1/9	1/4½
Bury St. Edmunds	1/6½	1/2½
Buxton	1/8½	1/3¾
Byfleet	1/7½	1/3
Cambridge	1/9	1/4½
Canterbury	1/7	1/2¾
Cardiff	1/9	1/4½
Carlisle	1/9	1/4½
Carnforth	1/9	1/4½
Castleford	1/9	1/4½
Caterham	1/9	1/4½
Chard	1/6	1/2
Chatham	1/8	1/3½
Chelmsford	1/8½	1/3¾
Cheltenham	1/8	1/3½
Chepstow	1/8½	1/3¾
Chertsey	1/8	1/3½
Chester	1/9	1/4½
Chesterfield	1/9	1/4½
Chichester	1/7	1/2¾
Chorley	1/9	1/4½
Cirencester	1/6½	1/2½
Clacton	1/7	1/2¾
Cleveleys	1/9	1/4½
Clitheroe	1/9	1/4½
Cobham (Surrey)	1/8	1/3½
Colchester	1/8½	1/3¾
Colwyn Bay	1/8	1/3½
Congleton	1/8½	1/3¾
Coventry	1/9	1/4½
Cranbrook	1/7	1/2¾
Cranleigh	1/7	1/2¾
Crawley	1/7	1/2¾
Crewe	1/8½	1/3¾
Cromer	1/6	1/2
Crowborough	1/7	1/2¾
Cuckfield	1/7	1/2¾
Darlington	1/9	1/4½
Darwen	1/9	1/4½
Daventry	1/7½	1/3
Deal	1/7	1/2¾
Denbigh	1/8	1/3½
Derby	1/9	1/4½
Devizes	1/6	1/2
Dewsbury	1/9	1/4½
Didcot	1/7	1/2¾
Diss	1/5½	1/1½
Doncaster	1/9	1/4½
Dorchester	1/6½	1/2½
Dorking	1/7½	1/3
Dover	1/7	1/2¾
Dovercourt	1/7	1/2¾
Driffield	1/7½	1/3
Droitwich	1/8½	1/3¾
Dudley	1/9	1/4½
Dunstable	1/7½	1/3
Durham City	1/9	1/4½
Eastbourne	1/8	1/3½
E. Glam. (Mon. Val.)	1/9	1/4½
East Grinstead	1/7	1/2¾
Edenbridge	1/7	1/2¾
Ely	1/6	1/2
Epping	1/9	1/4½
Exeter	1/8½	1/3¾
Exmouth	1/7½	1/3
Fakenham	1/6	1/2
Falmouth	1/7½	1/3
Fareham	1/8	1/3½
Faversham	1/7	1/2¾
Felixstowe	1/8	1/3½
Filey	1/7½	1/3
Fleetwood	1/9	1/4½
Flint	1/9	1/4½
Folkestone	1/7	1/2¾
Frinton-on-Sea	1/7	1/2¾
Frome	1/6	1/2
Gainsborough	1/8	1/3½
Gateshead	1/9	1/4½
Gillingham (Kent)	1/8	1/3½
Glossop	1/9	1/4½
Gloucester	1/8½	1/3¾
Godalming	1/7	1/2¾
Goole	1/9	1/4½
Gosport	1/8½	1/3¾
Grantham	1/8	1/3½
Gravesend	1/8½	1/3¾
Great Yarmouth	1/7	1/2¾
Grimsby	1/9	1/4½
Guildford	1/7	1/2¾
Guilsborough	1/7½	1/3
Halifax	1/9	1/4½
Hanley	1/9	1/4½
Harpenden	1/8	1/3½
Harrogate	1/9	1/4½
Hartlepools	1/9	1/4½
Harwich	1/7	1/2¾
Haslemere	1/7	1/2¾
Hastings	1/7	1/2¾
Hatfield	1/8½	1/3¾
Haywards Heath	1/7	1/2¾
Hednesford	1/8½	1/3¾
Hemel Hempstead	1/8	1/3½
Henley-on-Thames	1/7	1/2¾
Hereford	1/7	1/2¾
Herne Bay	1/7	1/2¾
Hertford	1/8½	1/3¾
Heysham	1/9	1/4½
Hitchin	1/8	1/3½
Hoddesdon	1/8½	1/3¾
Holt (Norfolk)	1/5½	1/1½
Horley	1/7	1/2¾
Horsham	1/7	1/2¾
Horwich	1/9	1/4½
Huddersfield	1/9	1/4½
Hull	1/9	1/4½
Hunstanton	1/6	1/2
Huntingdon	1/6½	1/2½
Ilfracombe	1/7	1/2¾
Ingatestone	1/7½	1/3
Ipswich	1/8½	1/3¾
Isle of Thanet	1/7	1/2¾
Isle of Wight	1/6½	1/2½
Keighley	1/9	1/4½
Kenilworth	1/9	1/4½
Kettering	1/9	1/4½
Kidderminster	1/8½	1/3¾
King's Lynn	1/7	1/2¾
Kirkham	1/9	1/4½
Knowle	1/8½	1/3¾
Lancaster	1/9	1/4½
Leamington	1/9	1/4½
Leatherhead	1/8	1/3½
Leeds	1/9	1/4½
Leicester	1/9	1/4½
Leighton Buzzard	1/6	1/2
Letchworth	1/8	1/3½
Lewes	1/7	1/2¾
Lichfield	1/8	1/3½
Lincoln	1/9	1/4½
Littlehampton	1/7	1/2¾
Liverpool	‡§1/11	¶
Llandudno	1/8	1/3½
Llanelly	1/9	1/4½
London—		
12m. radius	*1/10½	1/5½
12-15 m. radius	*1/10	1/5
Long Eaton	1/9	1/4½
Longton	1/9	1/4½
Loughborough	1/9	1/4½
Louth	1/7½	1/3
Lowestoft	1/7	1/2¾
Luton	1/8½	1/3¾
Macclesfield	1/8½	1/3¾
Maidenhead	1/8	1/3½
Maidstone	1/7½	1/3
Malvern	1/7½	1/3
Manchester	1/9	1/4½
Manningtree	1/6	1/2
Mansfield	1/9	1/4½
March	1/6	1/2
Margate	1/7	1/2¾
Market Harborough	1/8	1/3½
Matlock	1/7½	1/3
Melton Constable	1/5½	1/1½
Melton Mowbray	1/8	1/3½
Merthyr	1/9	1/4½
Middlesbrough	1/9	1/4½
Middleton	1/9	1/4½
Middlewich	1/8½	1/3¾
Milford Haven	1/7½	1/3
Morecambe	1/9	1/4½
Morley	1/9	1/4½
Mundesley	1/6	1/2
Nantwich	1/8½	1/3¾
Nelson	1/9	1/4½
Newark-on-Trent	1/8½	1/3¾
Newbury	1/7	1/2¾
Newcastle-on-Tyne	1/9	1/4½
Newcastle-u.-Lyme	1/9	1/4½
New Forest	1/7	1/2¾
Newmarket	1/7	1/2¾
Newport, Mon.	1/9	1/4½
Newport Pagnell	1/7	1/2¾
Northampton	1/9	1/4½
Norwich	1/9	1/4½
Nottingham	1/9	1/4½
Nuneaton	1/9	1/4½
Oakham	1/7½	1/3
Oldham	1/9	1/4½
Ormskirk	1/9	1/4½
Oxford	1/8½	1/3¾
Oxted	1/7½	1/3
Paignton	1/8½	1/3¾
Peterborough	1/8½	1/3¾
Plymouth	1/9	1/4½
Pontefract	1/9	1/4½
Pontypridd	1/9	1/4½
Port Talbot	1/9	1/4½
Portsmouth	1/8½	1/3¾
Preston	1/9	1/4½
Pulborough	1/7	1/2¾
Ramsgate	1/7	1/2¾
Reading	1/8½	1/3¾
Redditch	1/8½	1/3¾
Redhill	1/7½	1/3
Ripon	1/7½	1/3
Rochdale	1/9	1/4½
Rochester	1/8	1/3½
Rugby	1/9	1/4½
Saffron Walden	1/6	1/2
St. Albans	1/8½	1/3¾
St. Helens	1/9	1/4½
St. Neots	1/6½	1/2½
Salisbury City	1/6½	1/2½
Salisbury Plain	1/8	1/3½
Sawbridgeworth	1/7½	1/3
Saxmundham	1/5½	1/1½
Scarborough	1/8½	1/3¾
Scunthorpe	1/9	1/4½
Selby	1/9	1/4½
Sevenoaks	1/7½	1/3
Sheerness	1/7	1/2¾
Sheffield	1/9	1/4½
Shipley	1/9	1/4½
Shoeburyness	1/8½	1/3¾
Shoreham	1/8	1/3½
Shrewsbury	1/8½	1/3¾
Sittingbourne	1/7	1/2¾
Skegness	1/8	1/3½
Sleaford	1/7½	1/3
Slough	1/8	1/3½
Southampton	1/8½	1/3¾
Southend-on-Sea	1/8½	1/3¾
Southport	1/9	1/4½
South Shields	1/9	1/4½
Spalding	1/7	1/2¾
Stafford	1/8½	1/3¾
Staines	1/8	1/3½
Stamford	1/8	1/3½
Stevenage	1/8	1/3½
Stockport	1/9	1/4½
Stockton-on-Tees	1/9	1/4½
Stoke-on-Trent	1/9	1/4½
Stourbridge	1/9	1/4½
Stourport	1/8½	1/3¾
Stowmarket	1/6	1/2
Stratford-on-Avon	1/8	1/3½
Stroud	1/8	1/3½
Sunderland	1/9	1/4½
Sutton Coldfield	1/9	1/4½
Swaffham	1/5½	1/1½
Swanage	1/7	1/2¾
Swansea	1/9	1/4½
Swindon	1/7½	1/3
Tamworth	1/8½	1/3¾
Taunton	1/7½	1/3
Tenterden	1/7	1/2¾
Thames Haven	1/9	1/4½
Thetford	1/6½	1/2½
Thorpe Bay	1/8½	1/3¾
Todmorden	1/9	1/4½
Tonbridge	1/7½	1/3
Torquay	1/8½	1/3¾
Totnes	1/7	1/2¾
Trowbridge	1/6	1/2
Truro	1/6½	1/2½
Tunbridge Wells	1/7½	1/3
Uppingham	1/7½	1/3
Uttoxeter	1/7½	1/3
Wakefield	1/9	1/4½
Walsall	1/9	1/4½
Walsden	1/9	1/4½
Walton-on-Naze	1/7	1/2¾
Ware	1/8½	1/3¾
Warminster	1/6	1/2
Warrington	1/9	1/4½
Warwick	1/9	1/4½
Wellingborough	1/8½	1/3¾
Welwyn	1/8	1/3½
Welwyn Gar. City	1/9	1/4½
Wells (Norfolk)	1/5½	1/1½
West Bromwich	1/9	1/4½
Westcliff-on-Sea	1/8½	1/3¾
Weston-super-Mare	1/8	1/3½
Weybridge	1/8	1/3½
Weymouth	1/7	1/2¾
Whitby	1/8	1/3½
Whitstable	1/7	1/2¾
Widnes	1/9	1/4½
Wigan	1/9	1/4½
Wigton	1/7½	1/3
Willington	1/9	1/4½
Wilmslow	1/9	1/4½
Winchester	1/7½	1/3
Windermere	1/7½	1/3
Windsor	1/8	1/3½
Wisbech	1/6½	1/2½
Witham	1/7	1/2¾
Woking	1/7½	1/3
Wokingham	1/7	1/2¾
Wolverhampton	1/9	1/4½
Woodbridge	1/6½	1/2½
Worcester	1/8½	1/3¾
Workington	1/7½	1/3
Worksop	1/8½	1/3¾
Worthing	1/7	1/2¾
Wrexham	1/8½	1/3¾
Wroxham	1/6½	1/2½
Wycombe	1/8	1/3½
Wymondham	1/6	1/2
Yeovil	1/7½	1/3
York	1/9	1/4½

* Painters 1d. less than other Craftsmen. † Plus 2d. per working day. ‡ Plasterers 1/11½.
¶ Tradesman's Labourers 1/5½. Navvies and General Labourers 1/4½.
§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland, see page 370.

PRICES CURRENT OF MATERIALS *

Note: Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry. The prices for soft woods are for cash on delivery, and are subject to adjustment when the increased price of £22 per standard for national released stocks is finally fixed.

At present linseed oil and genuine spirits of turpentine can only be supplied in cans in small quantities.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads.

	£ s. d.
Best Stocks	4 18 0
Second Hard Stocks	4 11 0

Per 1,000. Delivered at London Goods Stations.

2⅝ in. Phorpres. A discount of 6d. 1,000 only monthly account.	King's Cross Station per 1,000. s. d.	To sites in W.C. District. per 1,000 s. d.
Pressed	51 0	57 0
Keyed	53 0	59 0
Single Bullnose	71 0	77 0
Rustics	71 0	77 0
Whites	71 0	77 0

	£ s. d.
White Midhurst Facing Bricks (delivered London site)	3 12 6
Best blue Pressed Staffs. (London Stns.)	8 18 0
Do. Bullnose (London Stns.)	9 8 0
Blue Wire Cuts (London Stns.)	7 15 0

Best Stourbridge Fire Brick (London Stns.):—
2½ in. 8 0 0 3 in. 9 15 0

GLAZED BRICKS. (London Stns.)

Best White Ivory and Salt Glazed Stretcher	23 0 0	D'ble Str'tch'rs	34 10 0
		D'ble Headers	31 10 0
Headers	25 10 0	One side & two ends	35 10 0
Quoins, Bullnose and 4½in. Flats	32 10 0	Two sides & one end Splays and Squints	36 10 0
			34 0 0

Second Quality, £2 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

"PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup.	2 3	3" per yd. sup.	2 9
2½" " "	2 6	4" " "	3 1

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½" " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½" " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London.

SAND.

Thames Ballast	7 9	per yd. delivered 2 miles radius Paddington.
Pit Ballast	7 3	" "
Pit Sand	9 9	" "
Washed Sand	10 0	" "
¾ in. Shingle	8 0	" "
¾in. Broken Brick	12 0	" "
Pan Breeze	8 3	" "

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area.

	£ s. d.
4 ton loads and upwards site Per ton	2 4 6
1 ton to 4 tons site	2 7 6
Alongside Vauxhall in 80 ton lots	2 2 0
"Ferrocrete" Rapid Hardening Cement—	
4 ton loads and upwards site	2 10 6
1 ton to 4 tons site	2 13 6
Alongside Vauxhall in 80 ton lots	2 8 6

Stored in Reserved Bins at works. 1/6 per ton extra.

"Aquacrete" Water Repellent, "Blue Circle" cement, 30/- per ton extra or ordinary "Blue Circle" prices.

	£ s. d.
"Colorcrete" Nos. 1 and 2. Coloured Rapid Hardening Portland Cement	3 14 6

"Colorcrete" not rapid hardening, according to colour, from £7 to £15 10s. per ton.

	£ s. d.
"Snowcrete" White Portland Cement	9 5 0
Super Cement (Waterproof)	3 14 6

NOTE.—Paper bags will be charged at the rate of 5/- nett per ton. Jute sacks charged 1s. 9d. nett each and 1/6 nett each allowed if returned to works within two weeks, in good condition.

Carriage will be paid by makers on returned empty jute sacks.

Roman Cement	£7 5	Keene's Cement, White	£6 10 0
Parian Cement	6 10	" " Pink	6 5 0

Cementone Colours for cement according to tints per cwt. from £2 16s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	3 12 6	Sirapite, Coarse	4 3 0
" White	4 0 0	" Finish	4 11 0
Pioneer	4 3 0		

Above prices for 4-ton loads and over London Area.

Best Ground Blue Lias Lime	2 15 0	Grey Stone Lime	2 10 0
		Chalk Lime	2 10 0
Granite Chippings	1 10 0	Hair per cwt.	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 11½
BEER STONE—RANDOM BLOCK—	
Free on rail at Seaton Station. per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. "	3 1½

Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

	s. d.
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 6
Do. do. delivered on road waggons as above stations, per ft. cube	4 6
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ¼d. beyond 30 ft.	
HOPTON-WOOD STONE—	
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb.	1¼ 0
Sawn two sides	22 6
HOPTON-WOOD STONE—	
Sawn three or four sides	27 9
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) per ft.super	5 6
6 in. rubbed two sides, ditto "	6 3
3 in. sawn two sides slabs (random sizes) "	2 7
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) "	1 8½
1½ in. to 2 in., ditto "	1 4½
HARD YORK—	
Delivered at any Goods Station, London.	
Scrappled random blocks. per ft. cube	6 10
6 in. sawn two sides landings to sizes (under 40 ft. super) per ft.super	5 7½
6 in. rubbed two sides, ditto "	6 9
4 in. sawn two sides slabs (random sizes) "	3 5
3 in. ditto ditto "	2 8
2 in. self-faced random flags Per yd. super	8 9

CAST STONE.

Delivered in London are in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube 10 6 to	0 13 0
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube 12 6 to	0 16 0
Dry Cuba Mahogany, per ft. cube	0 18 0
Dry Teak, per ft. cube	0 14 0
Dry American Whitewood, per ft. cube	0 10 6
Dry Australian Walnut, per ft. cube	0 19 0
Dry Queensland Silky Oak, per ft. cube	0 12 6
Dry African Mahogany, per ft. cube	0 10 0
Dry African Whitewood, per ft. cube	0 8 0
Dry English Wainscot Oak, per ft. cube	0 16 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. 4 7 0 to	5 10 0

SOFT WOOD.

MERCHANTABLE BRITISH COLUMBIAN PINE.

	Minimum. £ s. d.	Maximum. £ s. d.
Scantlings in imported sizes, 2in. by 3in. to 4in. by 11in.	43 10 0	53 0 0

Having secured the Contract— What about the Steel Scaffolding?

For the lowest Prices apply to the Oldest Firm in The Scaffolding Trade.

STEPHENS & CARTER LTD.

The British Steel Scaffolding Co.

731-761, HARROW RD., N.W.10.

Telephone No. Ladbroke 1191 (6 lines).

PLANED BOARDS.

PRIME CLEAR BRITISH COLUMBIAN PINE.

	Per standard. £ s. d.
1in. by 11in. } 1in. by 9in. }	67 10 0

	Per square. s. d.
1in. plain edge flooring	53 0
1¼in. ditto	66 6
1in. tongued and grooved	53 0
1¼in. ditto	66 6

MATCHING.

	Per square. s. d.
⅝in.	37 6
¾in.	42 0
1in.	55 0

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	31 13 6	18 by 10	16 15 0
22 by 12	26 12 0	18 by 9	15 7 6
22 by 11	23 18 6	16 by 10	14 11 6
20 by 12	23 8 0	16 by 8	11 10 0
20 by 10	21 0 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. Per 1,000 f.o.r. London

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	4 10 0
Ditto hand-made ditto	5 7 6
Ornamental ditto	5 12 6
Hip and valley tiles (per dozen) Hand-made	0 9 0
Machine-made	0 8 6

METALS.

	£ s. d.
JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	
R.S. Joists, cut and fitted	£19 5 0
Plain Compound Girders	21 15 0
" " Stanchions	24 5 0
In Roof Work	28 15 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	19 15 0	⅜ in. to ½ in.	18 5 0
⅝ in.	18 15 0	⅝ in. to 2½ in.	17 15 0

WROUGHT TUBES AND FITTINGS.

Deliveries from works.

Deliveries from London stock further 2½% gross.

	Tubes. ½"/6" %	Tubulars. ½"/6" %	Fittings. 10/17 19/24 %	Flanges. ½"/2" %	2½"/6" %
Light weight	55½	—	48	51½	58
Heavy weight	48½	48½	40½	41½	50½
Galv.lightweight	44½	—	39½	40½	* 49½
Galv.heavyweight	35½	35½	31½	30½	41½

Tubes and tubulars sizes ½"/⅝" inclusive, charged extra of 5% less gross.

Fittings. Figs. 25/34 5% less gross discount.

Terms.—Nett cash end of month following date of invoice. Carriage paid on lots of £10 nett value and over.

C.I. HALF-ROUND GUTTERS—London Prices ex Works.

per yd. in 6 ft. lengths.	Gutters.	Angles and Stop Nozzels.	Ends.
3 in.	1/3½	1/0½	4d.
3½ in.	1/5	1/2½	4d.
4 in.	1/5	1/3½	5½d.
4½ in.	1/6	1/6	6½d.
5 in.	1/9½	1/7½	7½d.

O.G. GUTTERS.

3 in.	1/8½	1/5½	4½d.
3½ in.	1/10½	1/5½	5½d.
4 in.	1/10½	1/6	6½d.
4½ in.	1/11½	1/9	7½d.
5 in.	2/5½	2/-	9d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Bends, stock Pipe.	Branches. angles, stock	angles.
2 in.	1/11½	1/3½	1/11½
2½ in.	2/0½	1/6	2/3½
3 in.	2/5	1/10½	2/9½
3½ in.	2/10½	2/3	3/3
4 in.	3/3½	2/8½	3/11½

NETT PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices, ex Stock.

	Bends, stock Pipe.	Branches. angle.	stock angles
2 in. per yd. in 6 fts.	3/3½	2/3½	2/9½
2½ in. "	3/11½	2/6½	3/6
3 in. "	4/2½	2/9½	4/2½
3½ in. "	4/3½	3/6	4/10½
4 in. "	4/8½	3/11½	5/7½

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock.

	Bends, stock Pipe.	Branches. angles.	stock angles
3in. per yd.in 9ft. lengths cwt. qr. lbs.	5/1	5/11½	9/5½
4 in. " 1 1 20	7/6	6/9	11/10½
5 in. " 1 2 22	9/1	12/2	18/5
6 in. " 2 0 6	10/9	14/0½	23/0

Gaskin for joining 65/- per cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(*contd.*)

	Per ton basis in London. £ s. d.		£ s. d.
IRON.—Staffordshire Crown, Merchant quality	16 12 6	to	17 17 6
IRON—Staffordshire Marked Bars	19 10 0	to	21 10 0
Mild Steel Bars	17 8 6	to	18 18 6
Mild Steel Hoops	19 2 6	to	19 12 6
	Ex Merchant's Stock, per ton (two-ton lots).		
Soft Steel Sheets, C.R. and C.A.—	£ s. d.		£ s. d.
20 gauge	21 10 0	to	23 17 6
24 gauge	21 15 0	to	23 12 6
26 gauge	22 10 0	to	24 7 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—			
20 gauge	23 11 3	to	24 16 3
24 gauge	24 1 3	to	25 6 3
26 gauge	25 6 3	to	27 1 3
Galvanised Flat Sheets, C.R. and C.A.—			
20 gauge	25 1 3	to	26 18 9
24 gauge	25 11 3	to	27 8 9
26 gauge	26 16 3	to	28 13 9
	Per ton. £ s. d.		£ s. d.
Cut Nails, 3 in. and up	23 10 0	to	25 0 0
	ALL NETT.		

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 1
Strong sheet	,,	1 3
Thin	,,	1 4
Copper nails	,,	1 3
Copper wire	,,	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in. ¾ in.
29/- 45/- per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in. ¾ in.
40/— 59/- per doz.

SCREW DOWN STOP COCKS FOR IRON.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
31/- 44/6 75/- 175/- 250/- 396/- per doz.

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
42/6 65/- 102/- 195/- 210/- 510/- per doz.

DOUBLE NET BOILER SCREWS.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
7/6 9/- 14/- 24/- 37/6 54/- per doz.

HEAVY CROYDON BALL VALVES.

½ in. ¾ in. 1 in. 1¼ in. 1½ in.
33/6 55/6 85/- 165/- 237/- per doz.

CAPS AND SCREWS.

1¼ in. 1½ in. 2 in. 3 in. 3½ in. 4 in.
9/- 11/- 16/6 29/- 42/- 45/- per doz

BRASS FERRULES OF SLEEVES.

1½ in. 2 in. 3 in. 3½ in. 4 in.
9/6 11/6 20/6 26/- 37/- per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

1¼ in. 1½ in. 2 in. 3 in.
8 lb. Lead P. .. 17/6 23/- 32/6 66/6 per doz.
8 lb. Lead S. .. 21/6 27/6 39/6 73/- per doz.

SOLDER.—Plumbers, 1/2. Tinmen's, 1/4. Blow pipe, 1/6 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in drums	per gallon	0 5 4
Boiled ,, ,, in drums	,,	0 5 7
Turpentine, in drums (10 gals.)	,,	0 5 3
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks).		61 0 0

Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.

GENUINE WHITE LEAD PAINT

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14 lb. tins) not less than 5-cwt. lots per ton delivered 83 10 0

Red Lead. Dry (packages extra) ..	per ton	52 0 0
Best Linseed Oil Putty (1 ton lots)	per cwt.	0 17 1½
Size. XD quality	fkn.	0 3 6

Turpentine substitute can be obtained and prices vary according to the quality from 2/9 gallon upwards.

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 14 0
Fine do.	,,	0 16 0
Fine Copal	,,	0 18 0
Pale Copal	,,	1 0 0
Pale Opal Carriage	,,	1 4 0
Best do.	,,	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	,,	0 18 0
Fine Copal Cabinet	,,	1 2 0
Fine Copal Flatting	,,	1 0 0
Hard Drying Oak	,,	0 18 0
Fine Hard Drying Oak	,,	0 19 6
Fine Copal Varnish	,,	1 0 6
Pale do.	,,	1 12 0
Best do.	,,	1 2 6
Best Japan Gold Size		1 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY (O.Q.) AND SELECTED GLAZING QUALITY (S.Q.).

PER FOOT SUPER.

In sizes not exceeding 80 in. long or 48 in. wide or 110 united inches.

	O.Q.	S.Q.
18 oz. in 300 ft. cases	2½d.	2¾d.
24 oz. ,, 200 ft. ,,	3½d.	4d.
26 oz. ,, 200 ft. ,,	3¾d.	4¼d.
32 oz. ,, 200 ft. ,,	5¼d.	6¼d.
24 oz. ,, 300 ft. ,,	3¼d.	3¾d.
26 oz. ,, 300 ft. ,,	3¾d.	4¾d.
32 oz. ,, 300 ft. ,,	5¼d.	6¼d.
18 oz. Obscured Sheet		5¼d.
24 oz. Obscured Sheet		6¼d.
Fluted, 21 oz.		9d.
Enamelled, 18 oz.		5¾d.
,, 24 oz.		6¾d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅜ in.	6¾d.
Rough cast double rolled, ½ in.	6¾d.
Figured rolled, and Cathedral, white	6¾d.
Figured rolled and Cathedral, tinted	9¼d.
Rolled Sheet	6d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10
"Calorex" Sheet, 21 oz.	2 6
,, ,, 32 oz.	4 0
,, Cast, ¼ in. thick	0 10
,, ,, ⅜ in. thick	1 0
,, ,, ½ in. thick	1 2
Non Actinic Glass, ¼ in. thick	0 9½
,, ,, ,, ⅜ in. thick	1 0
,, ,, ,, ½ in. thick	1 2

"VITA" GLASS.

	Per ft. s. d.
"Vita" Plate Glass, about 3/32 thick:	
To 7 ft. super	5 0
Over 7 ft. super	7 6
"Vita" Sheet Glass, about 18/20 oz.	2 0
Cathedral "Vita" Glass:	
¼" thickness	2 0
3/16" ,,	3 0
3/16" Georgian Wired "Vita" Glass	3 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	34 10 0
Pipe in coils	34 0 0
Soil pipe	39 10 0
Compo pipe	41 5 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton £19 10 0

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from October 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen	1/10	1/9½	1/9	1/8½	1/8	1/7½
Labourers	1/4½	1/4¼	1/3¾	1/3½	1/3	1/2¾

Aberdeen	A	Dumfriesshire	A²	Inverness	*	Perthshire	A³
Ayrshire	A	Dundee	A	Inverurie	A¹	Peterhead	A¹
Banff	B	Dunoon	A	Kincardineshire	A²	Renfrewshire	A
Berwickshire	A²	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A²
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Monifieth	A	Selkirkshire	A²
Doune	A	Forfarshire	A²	Moray and Nairn	B	Stewartry	A²
Dunblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peeblesshire	A²	Stornoway	A³
Dumfries	A¹	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

* This town has its own rates: Masons, 1/8; Carpenters, 1/8; Slaters, 1/8; Plumbers, 1/8½; Plasterers, 1/9, but 1/9½ is paid owing to the scarcity at present; Painters, 1/8 and Labourers, 1/3½.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 368

Quite different . . .

MANGER'S SUGAR SOAP in 4½d. cartons

is BEST for PAINT CLEANING & PREPARING for RE-PAINTING

Prove it by free sample from 'MANGER'S' SUGAR SOAP. Dept. B.12, Kingsland, LONDON, E.8.

THE SCOTTISH BUILDER

NEW BUILDINGS

ABERDEEN.—BUILDING.—Plans of new buildings and alterations to existing buildings in Aberdeen at a total cost of £3,388 were approved by the Plans Committee of the T.C.

GLASGOW.—ADDITIONS.—Plans are being prepared for alterations and additions to the Art Galleries. The architect is Mr. Thomas Somers, Office of Public Works, Municipal-buildings.

LANARKSHIRE.—HOUSING.—Plans prepared by Mr. S. McColl, County Housing Architect, Hamilton, for new houses, at Walston and Drumsyre.

STONEHOUSE.—BUILDING. — Messrs. J. Nimmo and Co., Ltd., 21, Bothwell-st., Glasgow, have had plans prepared for new offices.

Atmospheric Pollution.

Despite the increasing industrial activity in the years preceding the outbreak of the war, the state of the atmosphere has shown a steady improvement since 1936. This is shown in the Report on the Investigation of Atmospheric Pollution for the year 1938-39.*

The local authorities making the measurements of atmospheric pollution on which these reports are based have decided to carry on with the investigation if possible, since a knowledge of the state of the atmosphere is of importance even in war time. The seasonal variation of pollution from domestic and office fires is clearly shown by the figures given, while the effect of the pollution in cutting off daylight from the centres of towns is brought out in diagrams. The report also contains an article on the effect which atmospheric impurities have upon building stones.

* "The Investigation of Atmospheric Pollution: Twenty-fifth Report on Observations in the year ended March 31, 1939." Published by H.M. Stationery Office. Price 2s. 6d. net.

LAW REPORTS

JUDGE AND BUILDING SOCIETIES. APPLICATIONS AGAINST DEBTORS UNDER COURTS EMERGENCY POWERS ACT.

CHANCERY DIVISION.
Before MR. JUSTICE BENNETT.

Halifax Building Society v. Hannam.

This case came before the Court on the application of the Halifax Building Society for leave under the Courts (Emergency Powers) Act, 1939, to appoint a receiver of property, consisting of eighty houses, at Spalding, Lincolnshire, on the security of which Mr. G. H. Hannam, of Lumley-square, Skegness, had received an advance of £25,000 from the Society.

It was stated that Mr. Hannam was in arrears with his repayments under the mortgage to the Society, and he asked for leniency upon the ground that his difficulties arose through the present war.

The application on the summons before the Court was for leave to exercise any remedy available to the Society by way of taking possession, realisation of the security under the mortgage and costs, and it was stated in Court that the application was on a printed form, and that when the matter was before the Master it was made clear that the present application by the Society was for leave to appoint a receiver.

His lordship said if building societies realised the kind of letters received almost daily from persons who got summonses of that kind served upon them asking for orders to sell their homes they would probably stop it. In a great many of these cases the respondents were persons who were buying their houses with the help of money borrowed from building societies, and when such persons read summonses indicating that application for leave to take away their homes they were not unnaturally very disturbed in their minds. It would be better for everybody if building societies not wanting that form of order stopped issuing summonses as a matter of form asking for it. If not, perhaps if the summonses were dismissed with costs, they (the Societies) would stop it.

His lordship, in the result, said that a receiver would be appointed to apply the rents and profits as provided for by the Law of Property Act.

Order accordingly.

LIABILITY OF WATER COMPANY FOR DAMAGE CAUSED TO HOUSE FROM BURST PIPE.

COURT OF APPEAL.
Before LORDS JUSTICES MACKINNON, LUXMOORE and DU PARCQ.

Watson v. Sutton District Water Co.

This case, which came before the Court on the appeal of the defendants, the Sutton District Water Co., from the judgment of Mr. Justice Lewis in the King's Bench Division, raised the question whether the company had efficiently carried out their mandate to cut off the water of a house on the instructions of the occupier and tenant by turning off a tap which anybody could operate.

(The case was reported in *The Builder* of July 26.)

The plaintiff, Mrs. E. K. S. Watson, the tenant of a house known as Elvaston, Epsom-road, Ewell, Surrey, brought the action to recover damages from the defendant company, who were the statutory undertakers for the supply of water in the district in question, for alleged negligence and breach of duty.

In December, 1938, the plaintiff's son, on her behalf, by a letter dated December 8, asked the company to cut off the water supply to the house upon the ground that the house was to be unoccupied for several weeks, and on December 10 the defendants sent one of their men to carry out the instructions. The plaintiff's case was that at some time between December 18, 1938, and January 15, 1939, the defendants again connected the water supply to the house, notwithstanding that it was then still unoccupied and no instructions from plaintiff to the defendants to reconnect had been given, the result being that water entered the pipe leading to the cistern in the house and froze, bursting the pipe and doing considerable damage. Alternatively, plaintiff alleged that the defendants had failed to turn off the water effectively in the first instance in accordance with her instructions.

The defendants, by their defence, pleaded that their representative had, in accordance with the plaintiff's instructions, turned off the water supply on December 10, 1938, and denied that it was turned on again as plaintiff alleged. Defendants also denied all responsibility for the entry of the water into the pipes in the plaintiff's house and alleged that the plaintiff contributed to any damage which she had sustained by failing to turn off the governing tap inside the house.

In the Court below, Mr. Justice Lewis held that the defendants had not taken sufficient care to see that no water entered the house, since it was evident that somebody had turned on the stop-cock, which was in the highway, without difficulty. He said the defendants could not be said to have carried out their mandate to cut off the water by turning off a tap which anyone could operate. In the circumstances he gave judgment for Mrs. Watson for £145 damages and the costs. From this result the defendant company now appealed.

At the conclusion of the arguments the Lords Justices unanimously affirmed the judgment of Mr. Justice Lewis and dismissed the appeal with costs.

Mr. H. J. Wallington, K.C., and Mr. F. W. Beney appeared for the appellants; and Mr. Shawcross, K.C., and Mr. H. M. Pratt (for Mr. Eric White on war service) for the respondent, Mrs. Watson.

Training Semi-Skilled Labour.

The problem of training skilled employees is extremely urgent; equally so is the rapid training of semi-skilled, unskilled workers and women. A pamphlet issued by the National Institute of Industrial Psychology, Aldwych House, W.C.2, describes training methods based on scientific investigation, and capable of immediate use by firms faced with these problems. The pamphlet shows the drawbacks of leaving learners to pick up the work by themselves or merely by watching experienced workers. Emphasis is laid on the choice of an instructor, who should be taken off productive work while engaged in teaching.

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

BEITH SKEAT

THE STEEL SCAFFOLDING CO., LTD.

"BIG BEN TOWERS," 23, OATLANDS DRIVE, WEYBRIDGE, SURREY.

'Phone: Walton-on-Thames 614 and 615.

TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Tenders for A.R.P. work will be found under "A.R.P. Schemes."

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Aberystwyth.—Electric wiring and lighting in Art Room at Public Library, for T.C. E. P. Perkins, B. Electrical E. : *A. W. Miller, 9, Pier-st., Aberystwyth, £66.

Ballymoney. — Five shelters for U.D.C. Robert Robinson, Town S.

Evans Bros., Bellaghy	£1,020	0	0
T. Michael & Sons, Ballymoney	665	0	0
Wm. Murdoch, Ballymoney ...	598	12	6
*Hugh Taggart, Ballymoney ...	449	0	0
J. Rainey & Co., Portrush ...	575	0	0
John Boyle, Dunloy (for two)...	290	0	0

Bath.—Redecorating 23 Paragon, for T.C. : *F. J. Amery & Sons, Ltd., £149.

Belfast.—Tallow-bound limewash to public shelters, for C.B. City S. (Engineering Dept.). *Connor & Beattie, 45a, Mountjoy-st., Belfast.

Belfast.—Painting work at parks and playgrounds, for C.B. : Henry-st., Haymarket and Drumglass, play centres : *John Woods, 34, Dougall-rd., Belfast; Castleton play centres : *Moses Bullick & Sons, 4, College-green, Belfast.

Bootle.—Additions to Masonic Hall, for Freemasons' Lodge Trustees. *W. A. Gale, Ltd., 151, Linacre-la., Bootle, Liverpool, 20.

Glasgow.—Extensions to works. J. Wilson, architect, 200, St. Vincent-st., Blythswood. Excavation, brick and mason : *Garngad Brick and Sand Co., Ltd., Glasgow.

Harthill.—Restoration of buildings for Board of Management of North Staffordshire Royal Infirmary. Wood and Goldstraw, architects, Victoria-bldgs., Station-rd., Tunstall, Stoke-on-Trent. *Sambrook Bros., Ltd., Hamil-rd., Burslem, Stoke-on-Trent.

Hornsey.—Outside painting of Stroud Green school and South Harringay school, for T.C. *Stevens & Sons, Highgate, £277, and *Newby Bros., Southgate, £290.

Kensington.—Resurfacing of carriageway in Wrights-la., for B.C. : *Neuchatel Asphalt Co., Ltd., £560.

Lancaster.—Laying an 18-in. rising main in connection with Lansil sewerage scheme, for T.C. F. Hill, City E. and S. *Joe Johnson, Aldams-rd., Lancaster, £1,329 10s. 5d.

Lewisham.—Works for B.C. :—

Erection of 12 group domestic shelters.

Walker, Clinging & Co.	£1,375
Henry Kent, Ltd.	1,224
Powell, Driver & Foster	1,157
*Wates, Ltd.	1,118

Gas protection to public shelters.

W. Carter	£889	11	0
Powell, Driver & Foster ...	831	11	8
Clark Brothers, Ltd.	710	10	11
*Walker, Clinging & Co. ...	631	6	10

Liverpool.—Works, for City Council : Scaling and painting of steel structure for conveyors : *Ralph Pennington & Co., St. Helens, £654; Additional accommodation to X-ray dept. at Alder Hey hospital : *J. L. Rawsthorne & Co., Liverpool, £2,496; General repairs and decorations at 33, Catharine-st. : *Clayton & Dorsman, Ltd., 56, Myrtle-st., Liverpool, £170.

¶**London (Air Ministry).**—Contracts placed to the value of £500 or over for the week ended Sept. 28 :—

Ventilation work, Norris Warming Co., Ltd., London.

Electrical work, Edmundsons Electricity Corporation, Ltd., London.

Civil engineering work, Howard Farrow, Ltd., London.

Building work, Wm. Harbrow, Ltd., London.

General maintenance work, John Lucas & Son (Builders), Ltd., Prescot, and C. Bryant & Son, Ltd., Birmingham.

¶**London (War Dept.).**—Contracts placed for week ended Sept. 28 :—

Yorkshire, hutting (erection, 3 contracts), G. Dougill & Sons, Ltd., Chesnut-st., Darlington; and hutting (erection), Drake & Warters, Ltd., New Wells, Wakefield.

Derbyshire, building work, H. Rouse & Sons, 30, High-st., Mansfield Woodhouse.

Yorkshire, miscellaneous work, Lansdowne Building Co., 4, New-st., York.

Dorsetshire, building and constructional work, Whitelock & Co., Ltd., Branksome, Bournemouth.

Hampshire, building work, John Hunt (Chandler), Ltd., Park-ave., North Walls, Winchester.

Oxfordshire, miscellaneous work, Browne & Lilly, Ltd., Thames Side, Reading.

Sussex, hutting, Thames Steam Saw Mills, Ltd., West-st., Erith.

Suffolk, hutting (erection), W. A. Dawson, Cranleigh-gardens, Luton.

Suffolk, Norfolk and Cambridgeshire, building work, Johnson & Bailey, Ltd., 51/51a, Norfolk-st., Cambridge.

Staffordshire, building work, Perks & Gould, Ltd., Shale-st., Bilston.

Cheshire, hutting, Cooper Bros., Ltd., Catherine-st., Macclesfield, and W. Mulcaster & Co. (Contractors), Ltd., Haslington, Crewe, and (2 contracts) Lloyd & Cross, Ltd., 68, Argyle-st., Birkenhead.

Staffordshire, hutting, J. R. Deacon, Ltd., Lombard-st., Lichfield.

Hampshire, miscellaneous work, Bartley & Ward, Ltd., High-st., Crawley, and Alfred Hardy & Co., Ltd., Kingsway-ave., Woking.

Dorsetshire, miscellaneous work, H. G. Mills & Son (Builders), Ltd., Norwood-pl., Pokesdown, Bournemouth.

Radnorshire, hutting (erection), F. R. Hipperson & Sons, Ltd., 6, Broad-st. Place, London, E.C.2.

Pembrokeshire, hutting (erection), Hussey, Egan & Pickmere, Ltd., Main-st., Pembroke.

Glamorganshire, hutting (erection) (2 contracts), Williams Bros., Swansea-rd., Pontardawe, Swansea.

Manchester.—Works for T.C. Reinforced concrete hopper. *Northern Ferro-Concrete Construction Co., Ltd., Manchester. Alterations to heating installation in Town Hall. *William Bailey & Co., Ltd., Manchester.

Milnrow.—Interior decorating of assembly room of Reform Club. *G. Berry, 36, Dale-st., Milnrow.

Northampton.—Redecoration of 12 firemen's flats, for C.B. : *F. Griffiths & Son, £200.

Reading.—Supplying and laying on prepared concrete foundation at Station Approach approx. 5,250 super. yds. of mastic asphalt surfacing (with limestone aggregate), for C.B. B.S. *Highways Construction, Ltd., Iddesleigh House, Caxton-st., Westminster, London, S.W.1.

Rutherglen.—Painting, etc., police houses, etc. J. Stewart, architect, Albert-st., Motherwell-Wishaw. *Lanarkshire County Works Dept., Motherwell-Wishaw, £719 0s. 8d.

Sheffield.—Works for T.C. : Installation of electric light, Hollow Meadows Institution, *Electricity Dept., Corporation, £351 17s. 9d.; pump house at Rivelin Bank, *Public Works Dept., Corporation, £4,607; laying of 24-in. by-pass water main for East End scheme, *W. Birch & Sons, Ltd., Spen-la., York, £13,085.

Southport.—Painting work at Bickerstaffe pumping station and cottages, Bickerstaffe, and Scarth Hill pumping station and cottages, Ormskirk, for Southport and District Water Board. Engineer and Manager, 14, Portland-st. : *T. Ball, 58, Derby-st., Ormskirk.

Stretford.—Installation of new water service in tenement flats, for T.C. *J. & H. Rogerson, Ltd., Stretford, £164.

Sunderland.—Garage : *Snowdon Bros., Belford-rd., Sunderland.

Warrington.—Fan house and A.R.P. shelter, for Orford Tannery Co., Ltd. *Williams, Tarr & Co., Ltd., Bewsey-rd., Warrington.

Warrington.—Conveniences to works, for N. Greening & Sons, Ltd. *Company's Works Dept.

West Hartlepool.—Painting works for C.B. F. Durkin, B.E. *J. G. Liddle (municipal buildings); *Stokell, Ltd. (market shops); *G. W. Hutson (Mozart-st. cottages); *J. Proud, Ltd. (sewer ventilating columns). (All of West Hartlepool.)

West Riding.—General repairs to schoolhouse at Wadsworth Crimsworth school, for C.C. J. H. Crabtree, Divisional Clerk, Allan House, Sowerby Bridge. H. Wormald, A.R.I.B.A., Education Architect, County Hall, Wakefield. *A. Booth, Grange Works, Sowerby Bridge, £61 1s. 11d.

BUY BRITISH
FLOORINGS
WOOD BLOCK PARQUET
SOLID T&G HARDWOOD
PANELLING
POINT PLEASANT LONDON S.W.18
Stevens & Adams Ltd.
PHONE PUTNEY 5611 (6 lines)

FLOORINGS
'phone
BAYswater 0163
or send your enquiry for
Wood Block, T & G Strip, Parquet (in various designs)
and Composition Floorings.
TO
TURPINS PARQUET FLOORING Co. Ltd.
25 NOTTING HILL GATE, W.11
Established 1866

BATH STONE
OF BEST QUALITY
THE YOCKNEY & HARTHAM PARK STONE CO., LTD.
CORSHAM, WILTS.
HARTHAM PARK, CORSHAM
COPENACRE BOXGROUND.
Large Stocks: thoroughly sound and reliable.
TELEPHONE: 3219 CORSHAM
TELEGRAMS: YOCKNEYS 3219 CORSHAM
London Office: G.W.R. South Lambeth Goods Depot. Battersea Park Rd., S.W. Telephone: Reliance 3239

Boyle's Patent "Air-Pump" Ventilator
OVER TWO MILLION IN USE.
ROBERT BOYLE & SON,
Ventilating Engineers, 65, HOLBORN VIADUCT, LONDON, E.C.1. Tel. Central 4583.

A·R·P
CONSTRUCTION
W. & M. NEGUS, LTD.
Station Works, KING JAMES ST., SOUTHWARK, S.E.1.
WATerloo 5474.

Insist on
Estd 25 years
ZETA FLOORS
RELIABLE and SEASONED
EMPIRE TIMBERS
for PARQUETRY and WOOD BLOCKS
T & G BOARD FLOORING
Our modern mills concentrate solely on FLOORINGS, while all our floor-layers are fully experienced craftsmen.
Competitive prices. Finest workmanship.
WRITE FOR DETAILS.
ZETA WOOD FLOORING CO. (1910) LTD.
ESSEX HOUSE, STRATFORD, E.15. Maryland 2674